CHRISTMAS BUYERS' GUIDE

IND

model car Science

DECEMBER
1963

35¢

CUSTOM BUILDING

Make Models of
Detroit Dream Cars

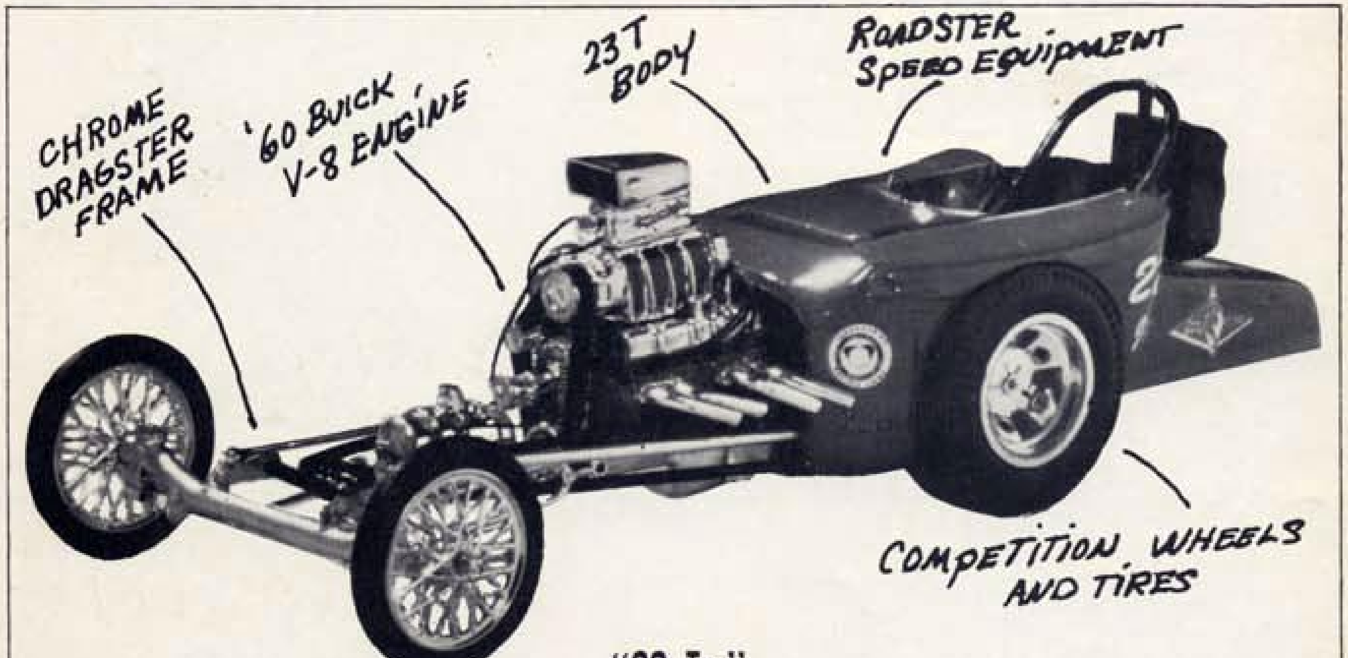


TABLE TOP RACING

CAR BUILDING
AND RACING TECHNIQUES



Here's how Mike Mills used Revell Custom Car Parts to build his version of Tony Nancy's sleek "22 Jr." modified roadster



"22 Jr."

When Mike Mills, of Lynwood, California, saw Tony Nancy's 1963 Winternationals winner, "22 Jr.", he flipped. He just had to build a model like it.

But how? Well, with a full blown imagination, hours of careful modeling, and 36 Revell Custom Car Parts kits to select from, he came up with the winner shown above.

He started with a chromed dragster frame, added roadster speed equipment. Next, competition wheels with thin motorcycle tires on front and dragster racing slicks on back. Mike mounted a '60 Buick V-8 Engine on the frame, then chopped and filled a '23 "T" Revell body kit to match the "22 Jr." body. For finishing touches a drag chute and NHRA decals gave Mike's model that one-of-a-kind authentic look.

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Maybe you just want to modify a car you've already built. Or customize the next regular car kit you buy. Whether you're going to scratch-build a dream car of your own or do a conservative customizing job, Revell has all the parts you might need, in exact 1/25 scale.

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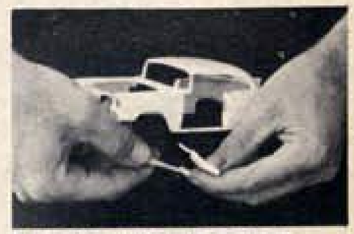
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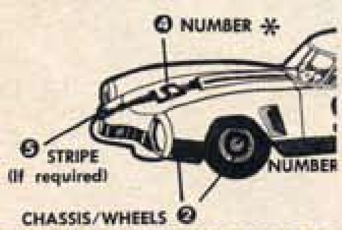
model car *Science*

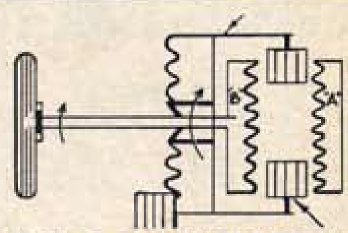












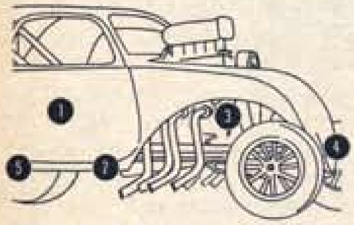
Thinking out loud about the endless variety of items that will be available to hobbiests for Christmas, MCS Editor Stephen Urette visited the sources to see what would be in the offing. The results of this trip are illustrated in Buyer's Guide starting on page 13.

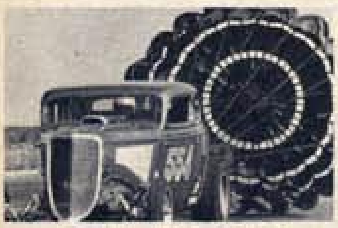
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Publishers.................Gordon Behn, Don Werner
Editorial Director.................Jim Miller
Managing Editor.................Stephen D. Urette
Associate Editor.................Spencer Murray
Art Director.................George Wallace
Production Manager.................D. L. Ruth
Advertising Director.................Marvin Patchen







MODEL MAIL

NEW ENGLAND COMPETITION

The New England Model Car Racing Association will be starting its fourth year of competition this fall. NEMCRA is an association of model car clubs. At the moment, there are six member clubs located in five cities: Nashua and Manchester, N.H., Lawrence, Lowell, and Waltham, Massachuetts.

Each member club holds its own weekly or bi-weekly meetings and holds the type of events it chooses in the scale that it wants. About eight times a year we hold New England meetings to which all the member clubs and outsiders are invited.

We use the "Aintree" standards for car and track construction with one additional rule. This is the "driven wheels" rule which requires wheels that power the model to be the same in number and location as the powered wheels on the prototype car. This rule prevents such anomalies as models of pre-war Auto-Unions with front drive or Vanwalls with four wheel drive.

NEMCRA will hold two New England meetings this Fall. Both will be on Sunday afternoons so out of town members will have sufficient time to travel. Both meetings will be in the Nashua-Lawrence area, and details about entries, times and location can be obtained from the secretary of the NEMCRA: Lee Carroll, Woodland Drive, RFD 2, Reeds Ferry, N.H.

Lee Carroll

MODELING TIPS

I just read your latest issue of MCS and as usual, thought it was great.

Here's a tip I found while wiring the mills in my models. Use small gauge insulated wire, after peeling the plastic insulation off. It looks more realistic, and a bit of plastic can be cut from the scrap insulation about 1/10" long to serve as spark plugs after being painted flat white.

Bob Kotello
Man., Canada

Terrific! That's my one word summary of MCS. I just got to California and would like to share a little painting secret, so here's the dope: Mix any solid color of bottle paint with either silver or copper in equal amounts and pour on your model. It gets a little messy, but the results are worth it. The silver and copper streak through the other color making a really weird job.

One other hint: AMT model putty will remove a paint spot on a slick if rubbed on and wiped off.

Tom Lillevig
Anaheim, Calif.

I'm sure you know about shag rug or "fluff" interior decoration. Well I've come up with a wild idea: Use cotton batting and liquid cement to "fluff-up" your interior.

Tom Cormier
Somerville, Mass.

The Corona Customs of Corona, N.Y. have just developed a way to race model cars that have rolling wheels. We took a piece of plywood 10 feet long by two feet wide and elevated one side 12 inches. Our club members thought it would be a good idea to pass this information to other clubs that can't afford an expensive road racing set.

Ron Umile
Corona, N.Y.

How do you make a Bikinied girl out of a Mini-man?

Royce Vaughn
Ozark, Alabama

If we ever find out, we'll never tell.

You showed a Russian car kit in the August issue. Is that kit the only type they have to customize? What can they do to a metal car anyway? You also said that the car is spring-driven, but that you fear its performance would be match for a good slot racer." Do you mean that it could beat some of our slot racers?

Lee W. Brannan
Simi, Calif.

This is the only kit I have ever seen from behind the Iron Curtain, but I would imagine there are others that modelers could buy. As far as customizing is concerned, I don't think that much is done by Soviet hobbiests. Most model builders in Europe concern themselves with construction of stock automobiles, or race cars. The sentence on performance should have read: "Its performance would be no match for a good slot racer." If any of our readers know of other interesting car kits from other countries, let us know and send some good photos along.

FOREIGN CONTEST ENTRIES

I have been following the progress of your magazine for some time and am intrigued by your Model Car Contests. I notice that all entries are from the U.S., and I wonder if Canadian entries are accepted.

Paul Hansen
Fredericton, N.B.
Canada

MCS Contest entries are accepted from all parts of the world. We'll be looking for yours.

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One-Eighth-Size Scale Model in the Grand Manner—Big-Big—20½ Inches Long—Operating Head and Tail Lights, Doors and Trunk Lid—Working Windshield—Real Steering!

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Operating head and tail lights. Two AA Penlight batteries fit in gas tank. Electric bulbs and wiring, but not batteries, included in kit.



Custom interior showing operating doors, rolled and pleated custom upholstering, instrument panel, folding windshield, steering wheel, etc.

Street/Show Roadster





Operating trunk lid and upholstered trunk interior, operating tail lights, stock gas tank, chrome plated Mag racing wheels.

Classic '32 Ford Roadster

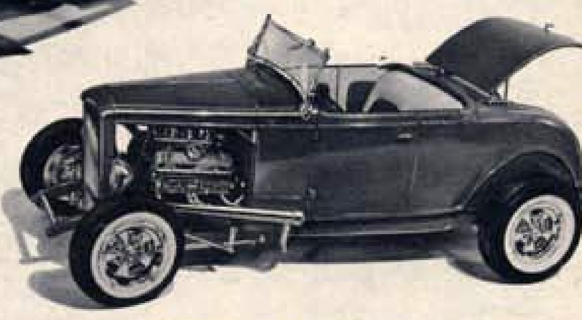
Build-It-Your-Way Custom Model Scaled from Original Car and Customizing Equipment

Whether modeler or hot rod fan—give yourself a thrill. Make this magnificent big scale model of the famous and classic '32 Ford Roadster, as you like it best. The Big Deuce is bigger, more glamorous, and has more parts and more chrome, than even the Big "T"—the 1962 Hobby Kit Champion. Scale 1½ inch.

Make it as a dressed up Street/Show Roadster with fenders, running boards, white top and with or without the hood. Or make the conventional Street Roadster, with custom or stock grille, or the traditional Highboy, high on the frame. Make it with the big super-detailed Pontiac engine, loaded with chrome —six carburetors—individual spark plugs and wiring. Get a bang out of the opening and closing doors and trunk lid, realistic steering, operating head and tail lights and superb white wall tires. Kit contains 284 perfect fitting parts.

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Length 20½ Inches • Wheelbase 13¼ Inches

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Richard Erickson, 517 80th St., North Bergen, New Jersey

Totowa Hobby Shop, 388 Union Avenue, Paterson 2, New Jersey

Ohio

Jerry Osborne, 6127 Hammel Ave., Cincinnati 37, Ohio
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"Forest City 1/25th ERS"
Located on Cleveland's West Side, this group has three AMT tracks. Two are road courses, the third is an extended oval.

Lakewood Scale Model Raceways, 17114 Detroit Ave., Cleveland, Ohio

Missouri

The Ecurie Liberty Club, Mc Bowl Building, 906 West Hiway 10, Liberty, Missouri Phone: GI 3-3614

North Carolina

Tommy Poe, 4801 Hardwick Rd., Charlotte, N.C.

South Carolina

Model Auto Racing Association of Columbia, 1801 Green St., Columbia, S.C.

Louisana

The Hobby Guild, 4513 Freret St., New Orleans, La.

Illinois

Chuck Heckler, 536 Stange Ave., Springfield, Illinois.

East Coventry Race Course, 1328 Madison St., Evanston, Illinois

Iowa

Sunnyside Racing Association, 2301 Gear, Burlington, Iowa

Marshall Miniature Speedway Association, 13 North 1st Street, Marshalltown, Iowa

Colorado

Aurora High Model Club, c/o Stan Reeves, 10th and Newark, Aurora 8, Colo.
Club has a 1/25 scale drag strip. Races held every other Thursday at 7 p.m.

Texas

Ohmco Raceway, 837 W. Davis, Dallas 8, Texas
Phone: WH 2-3054

Washington

Parkers, Burien Hobby Center, 619 S.W. 152nd, Seattle 66, Wash.
Four lane road race track 18' x 65' for both 1/32 and 1/24 scale, plus a scale ¼ mi. drag strip. Racing every Monday and Friday evening.

California

South Bay Raceways, 1213 Hermosa Ave., Hermosa Beach, Calif. Phone 367-2811
International Hobbies, 1809 Lincoln Blvd., Venice, Calif.
International Hobbies, 2302½ Artesia Blvd., Redondo Beach, Calif.
Le Mans Hobbies, 3909 Sepulveda Blvd., Culver City, Cali. Phone 391-0097
Ventura Hobbies, 11746 Ventura Blvd., Studio City, Calif. Phone 769-9828
"The Sleepers," Rt. 4, Box 403, Lodi, Calif.
Alamo Raceway, J & R Variety Store, 5 Market Plaze, Alamo, Calif.
Phone: Area 415, 837-9906
Hours: 2 p.m. til 9 p.m., Monday through Saturday.
Marina Raceway, 12901 Venice Blvd., Los Angeles 66, California

5th Ave. Hobby Shop, 2505 W. Manchester, inglewood, Calif.

R. E. Owens, 666 North Tustin, Orange, California

Pico Drag Center, 9316 E. Whittier Blvd., Pico Rivera, California
Ecurie Concours Model Car Racing Club, c/o Norman O. Davis, 4522 Madoc Way, San Jose, California
Pioneer Raceway, 13331 Telegraph Rd., Whittier, Calif.

Oregon

Northwest Scale Racing Association, 1728 N.E. 40th St., Portland, Ore.

Canada

Maxport Slot Car Racing Club, 5 Sellmar Rd., Weston Ontario, Canada



TRACK TALK

BY BILL SIPPEL

MCS gets mail — lots and lots of it. Most of it concerns slot racing and some of the problems encountered by advocates of the sport. When we pair the letters off, we can see interesting trends developing. For example:

There is a great deal of interest in HO and other small cars. The limited amount of space in the average house, or in the run of the mill hobby shop, accounts for some of this, but there are other reasons, too. Some people like to duplicate existing full-size course layouts. In the larger scales an enthusiast might need an airplane hangar to set it up, but in HO the family basement might suffice. There are some fine cars available commercially that are not precisely HO in scale, leading to the development of a course suited to the cars. Some of these off-beat but fun scales are 1/52nd, 1/48th and 1/40th. In future issues of MCS you will find pages devoted to these smaller scale cars, all of them under 1/32nd size.

Questions frequently arise on the electrical tapes or braids used for pickup. The *braid* we recommend is TV ground strap, 3/16ths of an inch in width. The *tapes* most frequently used are Permacell and 3M aluminum, both adhesive backed and 1/4th of an inch wide. The tapes *do* occasionally peel loose from the track surface, especially in areas where a car's wheels often drift across, but it is not a fast recurring situation and normal track maintenance will prevent it from becoming a serious problem.

A major dilemma seems to be the proper scaling of both tracks and cars. Naturally, unless you have absolutely unlimited space you cannot hope to faithfully recreate a full-size course such as Le Mans, etc. Therefore, courses must be *simulated* by constructing a design that is reasonably hard to drive on. A course that is easy to drive becomes boring — too difficult a course tends to discourage all but the very best handlers. One thing to keep in mind; car speeds and handling are *not* like real cars. Scale-wise, you go much faster and into much tighter turns than in real life racing. You cannot get into a four wheel drift with a guide shoe on a model. But the cars do slide out in back on turns and space must be left for this so your car will clear fences, hedges, hay bales etc. On the average, from the slot of the outside track to the edge of scenery allow these distances: 1/32nd—five inches; 1/24th—six and a half inches.

The mail also tells us there is quite a bit of interest in scale 1/8th mile drags. The chief reason is available space. By running the 1/8th mile you'll find a wider variety of motor makes in the winners' circle — all making for more interesting events. Deceleration length needed for the 1/8th mile are 1/3rd the course length for low voltage drags, ½ for higher voltages.

Now seems a good time to bring something extra to drag racing. Add a rheostat to *each* lane. Now you can really *drive* your drag machine — feather it off the line, blast it off if you don't have wheelspin problems, and so on. Interesting? Much more so than driving by off/on switches. To top that, connect the rheostats to a foot throttle! MCS is setting up a drag course with foot throttles—seems like realism is greatly heightened, and we'll keep you filled in on results. Once our strip is finally ready we will test manufactured cars, scratch built units and will undoubtedly ask to receive reader/built machines for evaluation. But right now all this is in the planning stages, so *don't* send us your cars — at least, not quite yet!

Next month will see the start of our actual *road tests!* The tests will be conducted using manufactured cars, at first. The course being assembled is a *driver's* course where acceleration, deceleration, handling, and general performance will be of primary importance, rather than just all-out speed. In our tests the same lane will be used for all cars in order to give us a true evaluation of the machine. The lane will be timed to the split/second. Tests will cover the car as it comes out of the box; the car tuned and modified using only parts and suggestions from the manufacturer; and with open modifications and a no-holds-barred attitude. The track and the tests will also be valuable in giving us true data on front and/or rear wheel drive, fallaway guide shoes, suspensions, etc.

So the reader can see that the letter he sends us, even if it isn't personally answered, *does* have a lot to do with what appears here in *your* magazine.

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Ferrari Berlinetta Racer

Pagoda Control Tower Kit





Lap Counter W/Track



COMPETITION ACCESSORY GROUP

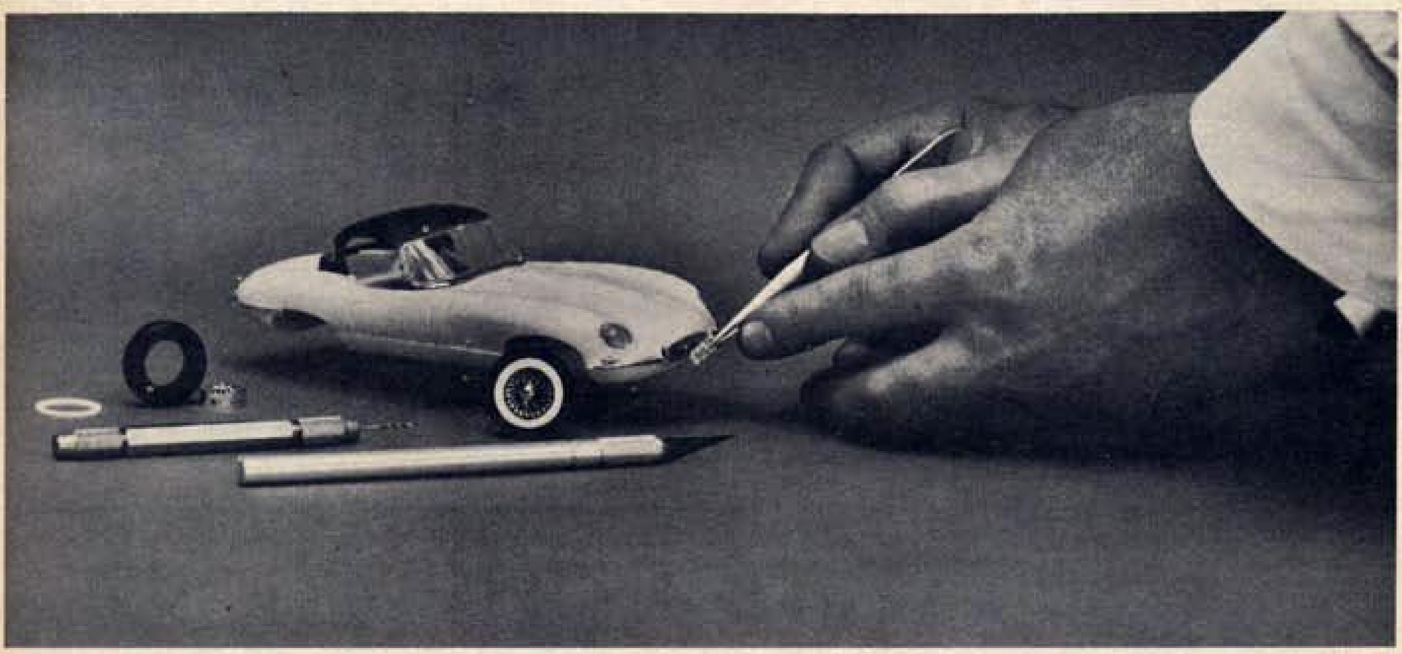


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model car COMMENTS

By Jim Keeler

Model Car Comments is being written from Detroit this month while I'm visiting General Motors and Ford. By now, most of you have seen the '64 cars and the styling opportunities they present. As you can see by the photos, Ford has gone "wild" with two new experimental cars. "Twister," a 3/8 scale model dragster, if built full size, would be powered by two Ford 427 V-8 engines. The plexiglass canopy is hinged at the front to al-

TWISTER DRAGSTER BY FORD.



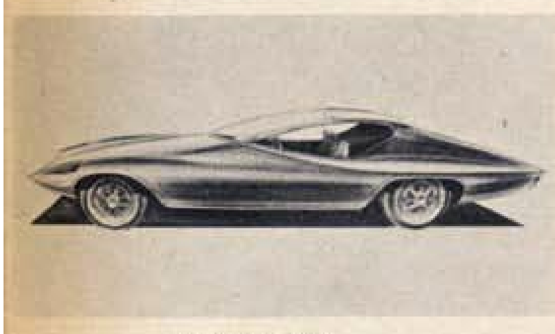
low easy entry and exit, and the car is painted white at the front, fading into orange and then a bright candy red at the rear. This paint treatment simulates the glow of a missile re-entering earth's atmosphere. A paint job similar to the "Twister's" could be done using the spray can "candy" and pearl paints. The



THE ALLEGRO.

streamlined body shell could be made from fibreglass, and mounted on one of the dragster frames from AMT, Monogram or Revell. In 1/25 scale, this car would be a real winner!

Another new car from Ford, shown here, is the Cougar II. This is the third in a series of Ford experimental cars being prepared for the New York World's Fair in 1954. Cougar II is a two-passenger, GT car with a fastback roof, concealed "pop-up" headlamps and a businesslike, fully instrumented interior. The styling experimental car is 167.8 inches long and has a 90-inch wheelbase. Overall height is 47.8 inches, overall width 66.6 inches, tread width 50.5 inches in front and 52 inches in the



THE STING RAY.



Continued on page 12

COMING IN MCS

Building the X-15 Dragster

New Ideas for SLOT Tracks

model car COMMENTS

Continued from page 11

rear. Powered by a 260 cu. in., high-performance Ford V-8 engine, the car could be engineered to attain speeds in the 170 miles per hour range, Ford contends. Even with its racing potential, the car would not look out of place at a car show or the shopping center.

I took a test ride in the original "Sting Ray" sports car around the General Motors Technical Center. While there, I also viewed some of the advanced styling proposals. Both of these cars would make great prize-winning models. If enough readers show interest, we'll do a complete article on styling and scratch building a model using clay models, fibreglass and advanced model building techniques. Next month's column will be a full page of questions and answers — see you then.



FORD'S COUGAR II.



CHRISTMAS BUYER'S GUIDE

A gift that stimulates the imagination and creative ability will be appreciated for many months after the pretty wrapping and tinsel on the Christmas tree are gone. Here are a few gift suggestions for hobbyist of all ages selected by the editors of Model Car Science.





1. ITC Model Craft Mercer Cam-A-Matic — $ 8.95
2. Senics Lichen Moss — 0.59
   Senics Grass — 0.29
3. 2-in-1 Dragster Kit by Lindberg — 10.98
4. Aurora Pit Kit — 1.49
5. Strombecker XKE Kit — 3.95
6. One-year subscription to Model Car Science — 3.00
7. Strombecker XKE Berlinetta — 5.95
8. Pactra 'Namel — 0.69
9. Real-Like Trees — 1.00
10. Aurora Judges Stand — 0.98
11. UPC Mak-A-Mountain Scenery — 1.00
12. Scalextric Bentley — 14.95
13. Aurora Start-Finish Pylons — 2.98
14. X-Acto No. 81 — 3.75
15. Pittman — 4.75
16. X-Acto Tool Kit — 5.50
17. Monogram's Deussenberg (in kit form only) — 2.98
18. Revell Beatnick Bandit (in kit form only) — 1.98
19. Lionel Speedway 600 Track — 24.95



1. Pyro Volkswagen kit	.98	7. Strombecker XKE Jaguar	5.95	12. Revell-Pittman RP-66 motor	5.00
2. U-Reely control handle	6.95	8. X-acto pit kit	2.95	13. Dremel Moto-Tool	29.95
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6. Strombecker Ferrari	5.95				

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2. Mattel Vac-U-Form 16.00
3. Aurora XKE Jaguar 1.49
4. Revell Thermopylae 11.95
5. Revell Weather Forecasting Lab. 7.95
6. K & B Crystal Radio Kit 2.98
7. Popular Hot Rodding Binder
   One year subscription to PHR 3.00
8. X-acto #84 Tool Kit 10.95
9. Cox Prop Rod 10.00
10. Cox 605 Power Pack 5.98





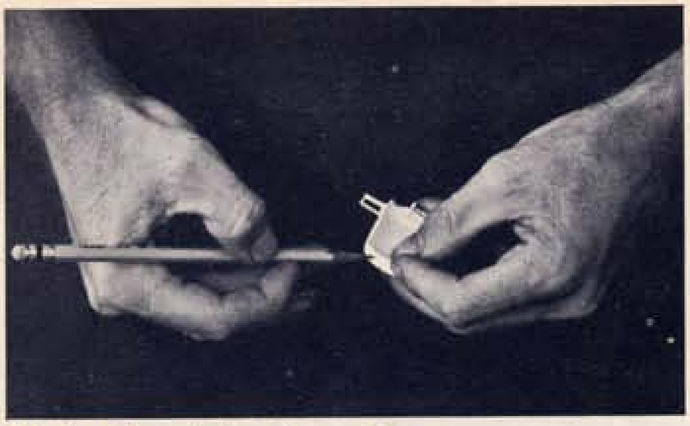
1.	Aurora Grand Stand	$ 1.98	4.	AMT '63 Pickup Truck	2.00	7.	Revell '49 Willys (in kit form only)	1.98
2.	Russkit Racing Body	2.98	5.	Ulrich Upholstery Kit	0.59	8.	VIP BRM Club Special	12.95
3.	IRC Solar Powered Radio	19.95	6.	Revell Racing Wheels	0.50 pr.	9.	Aurora HO Road Racing Set	21.95



1. Atlas HO Motoring Accessory Set $ 5.95
2. Gilbert Microscope & Lab Set 10.00
3. X-Acto Swedish Plier 3.25
4. UPC Landscape Coloring Set 1.00
5. Russkit Bodies (in kit form only) 2.98
6. Motorcade Magazine's report on the '64 cars .50
7. Aurora Road Racing Accessories 1.49
8. X-Acto Custom Sanding Set 3.95
9. Kodak 300 Instamatic camera 44.95
10. AMT '49 Mercury kit 1.49
11. Strombecker Road Racing Kit 29.95
12. Hawk Weird-Ohs 1.00
13. Jet King blow torch 2.25
14. X-Acto Solder Aid tool set 2.00
15. Jeweler's screw driver set 2.50



1. Lionel-Porter Chemistry Lab. $17.95
2. Monogram Big Tub 10.98
3. Ups 'N Downs Racing Game 2.00
4. Custom Model Building Ideas (Popular Customs Magazine) 0.50
5. X-Acto Razor Saw Set 1.75
6. Aurora '22 Ford Kit #568 1.98
7. Cameron Rodzy .15 19.95
8. Science Discoveries Lab 1.00
9. Revell's Ivo Dragster Kit 1.98
10. K & B Stallion .35 engine 10.00
11. Revell XKE Jaguar (in kit form only) 5.95



Mark edge of the door where magnet will be fitted.



Cut out marked section with an X-Acto saw. Make hole slightly smaller than the magnet and trim for a good fit.

magnetic doors

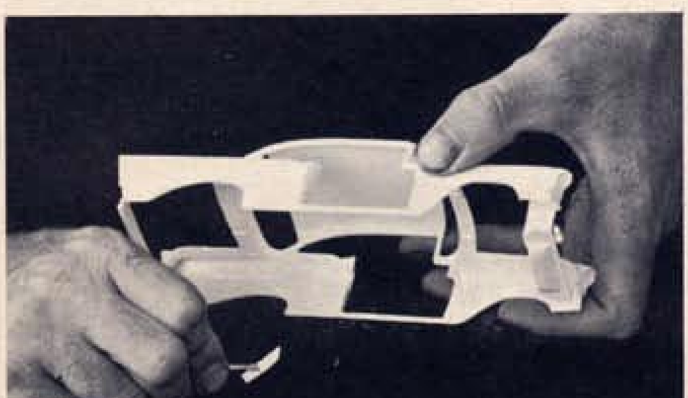
For years, model builders have been making opening doors, hoods and trunks on their cars. Today, the newest trend with manufacturers is to bring out models with these features pre-cut. With all these advancements, one problem still remains: everytime you pick up your model, the doors, hood and trunk fly open. What can you do about it? Make your doors, hood and trunk operate stiffly? No! Try using magnets. Where do you get them? The ones in this article come from potholders that stick to the side of stove. You might also check with Auto World. Rumor has it that they are going to be carrying them. Or just look around, you'll be surprised at how many sources of magnets you can find. Get busy and be the first in your group to have magnetic catches on your model.



Cut a new door edge from scrap plastic to fit behind existing edge.



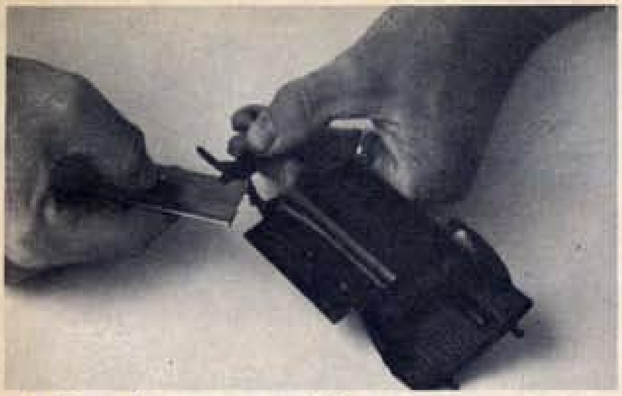
Cement new edge in place making sure it will not interfere with installation of door.



Repeat steps 1 through 4 on the body door jam. Be sure both magnet holes line up.



Cement magnets in place, then bond doors to body according to kit instructions.



With an X-acto saw, carefully cut top "A" frame from the rest of the frame.

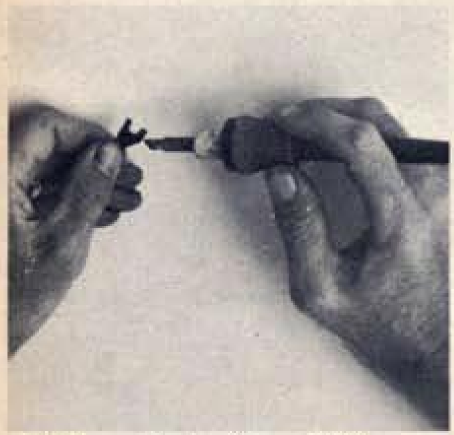


Cement two pieces of plastic cut from a plastic parts tree for spacers.

by Bob Paeth

LOWERING the LATE MODELS

Every once in a while you read articles in custom car books on "How to lower your car correctly." Now what about lowering model cars? Contest judges will always look at a model to find out how it was lowered. I have seen cars where the builder left the axle out completely and glued the wheel directly to the top of the fender. Others have cut the top of the wheel off to make the car lower. Some modelers have even glued the axle to the frame leaving out the spring! Practical? No! This project deals with the lowering of an independent suspension system on cars from about 1949 to the present. Follow these instructions closely and your model will be lowered sensibly and will still be true to scale.



Lightly rub back of lower "A" frame with an electric pencil to heat plastic "anchor points." Then bend the two points back slightly.



Using the electric pencil, melt the two spacers into one piece (square block).



With chopped coil spring and king pin in place, cement top "A" frame to assy.



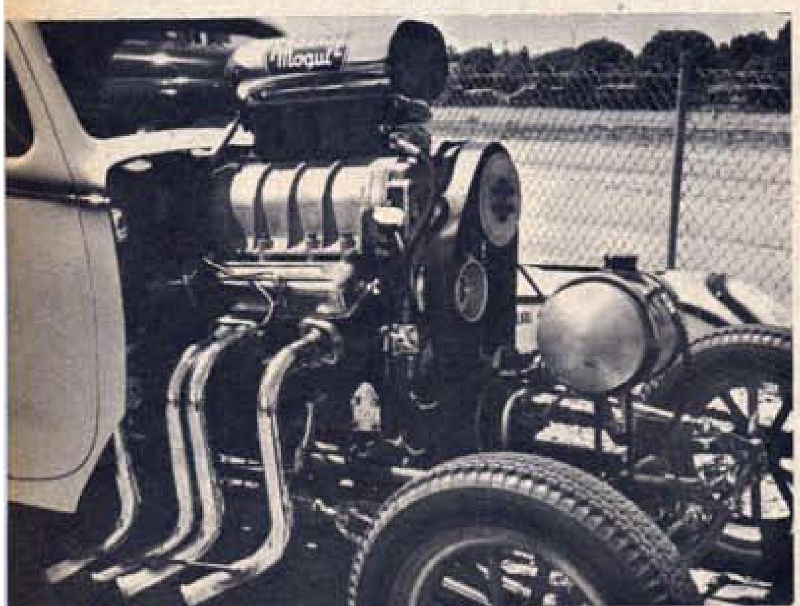
Cement lower "A" frame in place following kit instructions.



Cut coil spring for a better fit and a lower car.



This comparison shows difference between stock and lowered side. Lowered side is about five inches lower in scale.

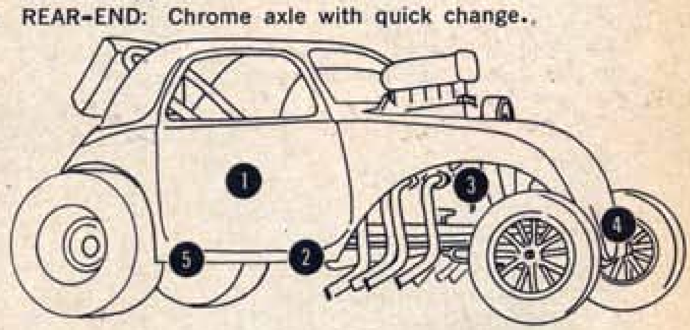


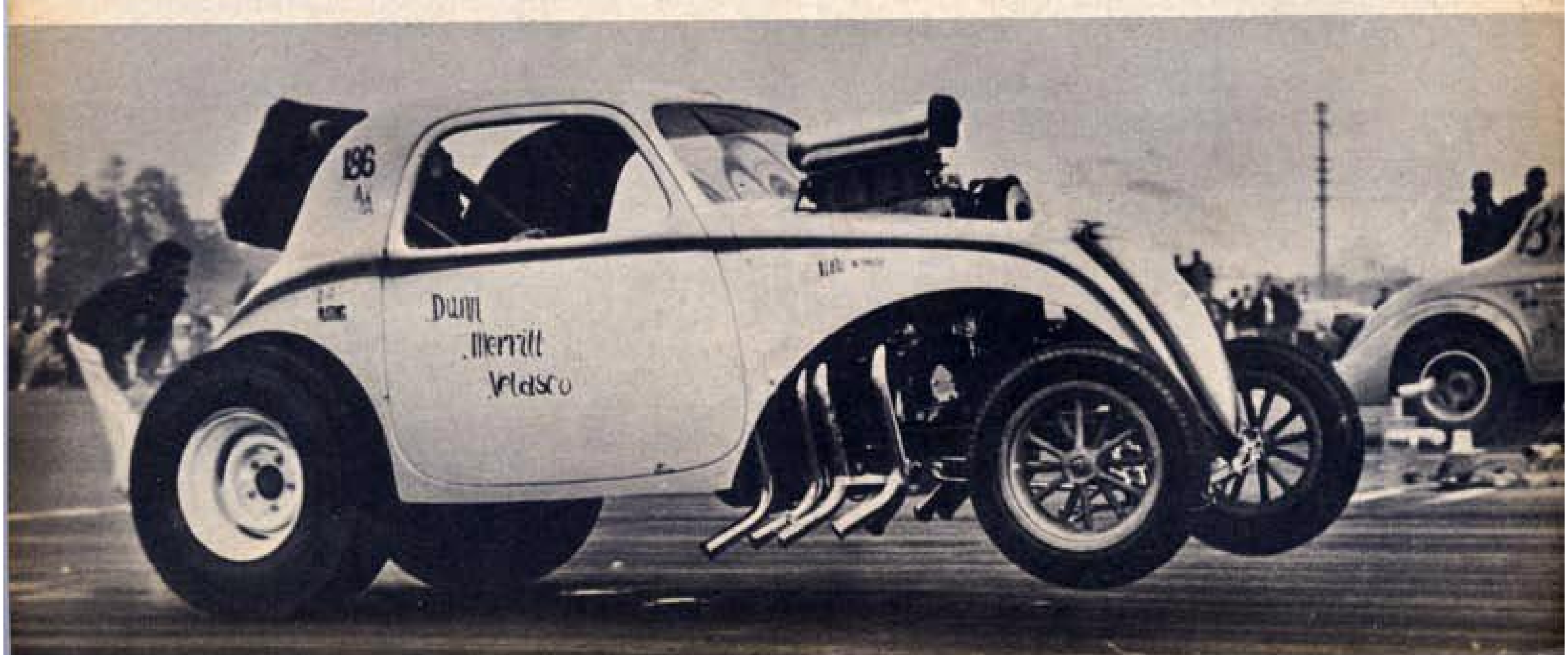
Fierce Fiat

Jim Dunn, Dewey Merritt and Henry Valasco are responsible for this yellow pearl with black fogged Fiat Coupe that is consistently going above the 160 mph in 9 seconds. Power comes from 374" of blown Chevy. Cal Automotive body is dropped over chassis of owners design.

1. BODY: Revell's Fiat Coupe Body C1129. The nose section is cut just behind the air vent. Use the blank nose piece that comes with body. Nose piece is glued and filled in with cowl section. To cut hood for blower use line already marked in body but cut all the way over to side panels. Complete hood can be hinged.
2. FRAME: Revell's Tubular Roadster Frame C1127 & AMT's Double Dragster frame cutting off roll cage and mounting on the tube frame.
3. ENGINE: Revell's Corvette Sting Ray Engine Kit C1107. Using Revell's 4 port injection from the '56 pickup, scoop is Revell's cut to fit injectors.
4. FRONT—END: Revell's Roadster Speed Equipment C1132 dropped axle.
5. REAR-END: Chrome axle with quick change.





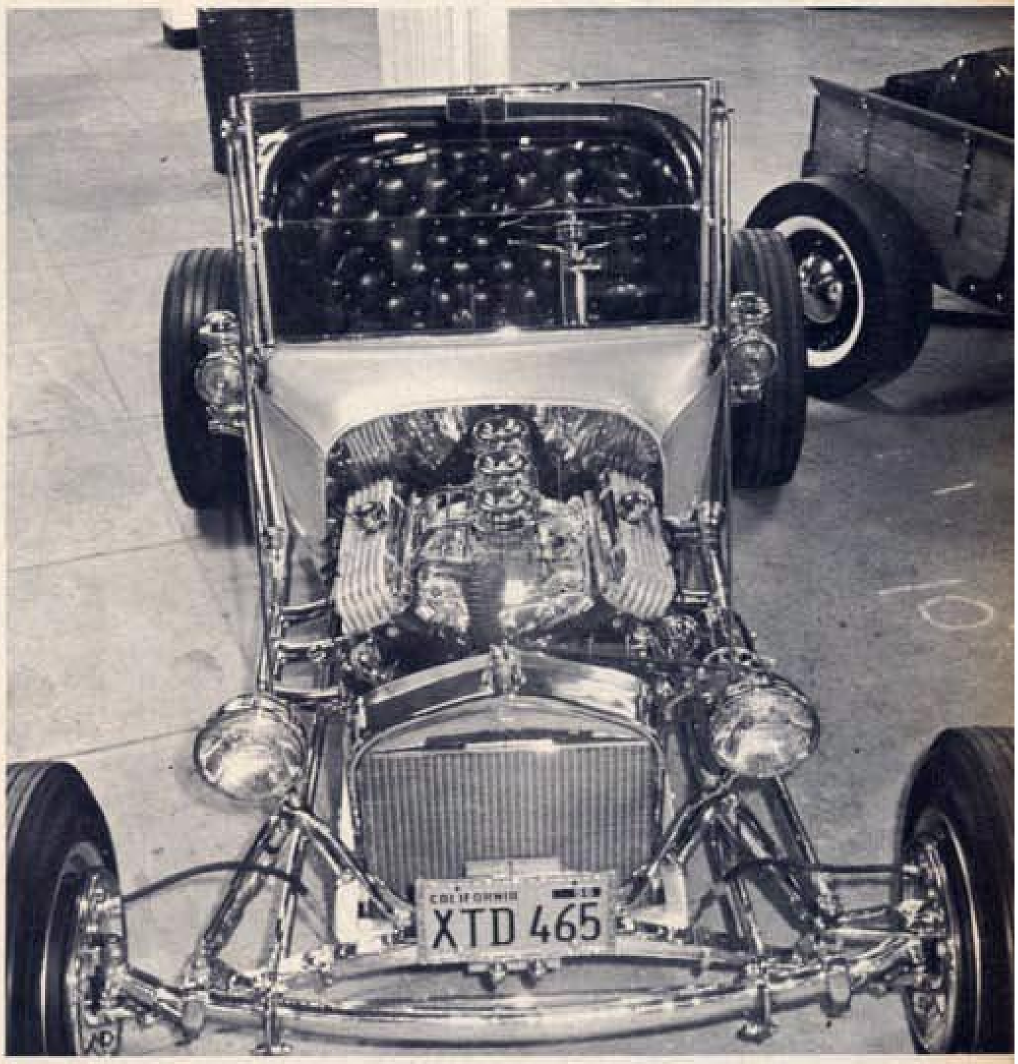


and HOT RODS
BUILD THE MODELS

TOP '24 'T' ROADSTER

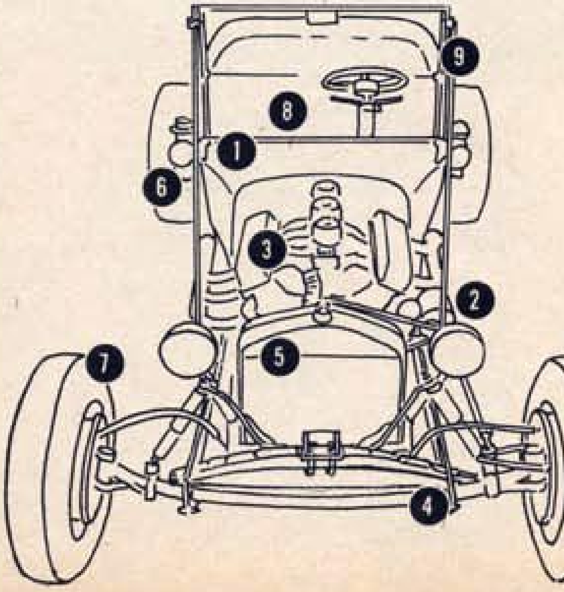
Mint pearl lacquer makes Walt's "T" a standout wherever it may go. Power is from a '56 Pontiac.

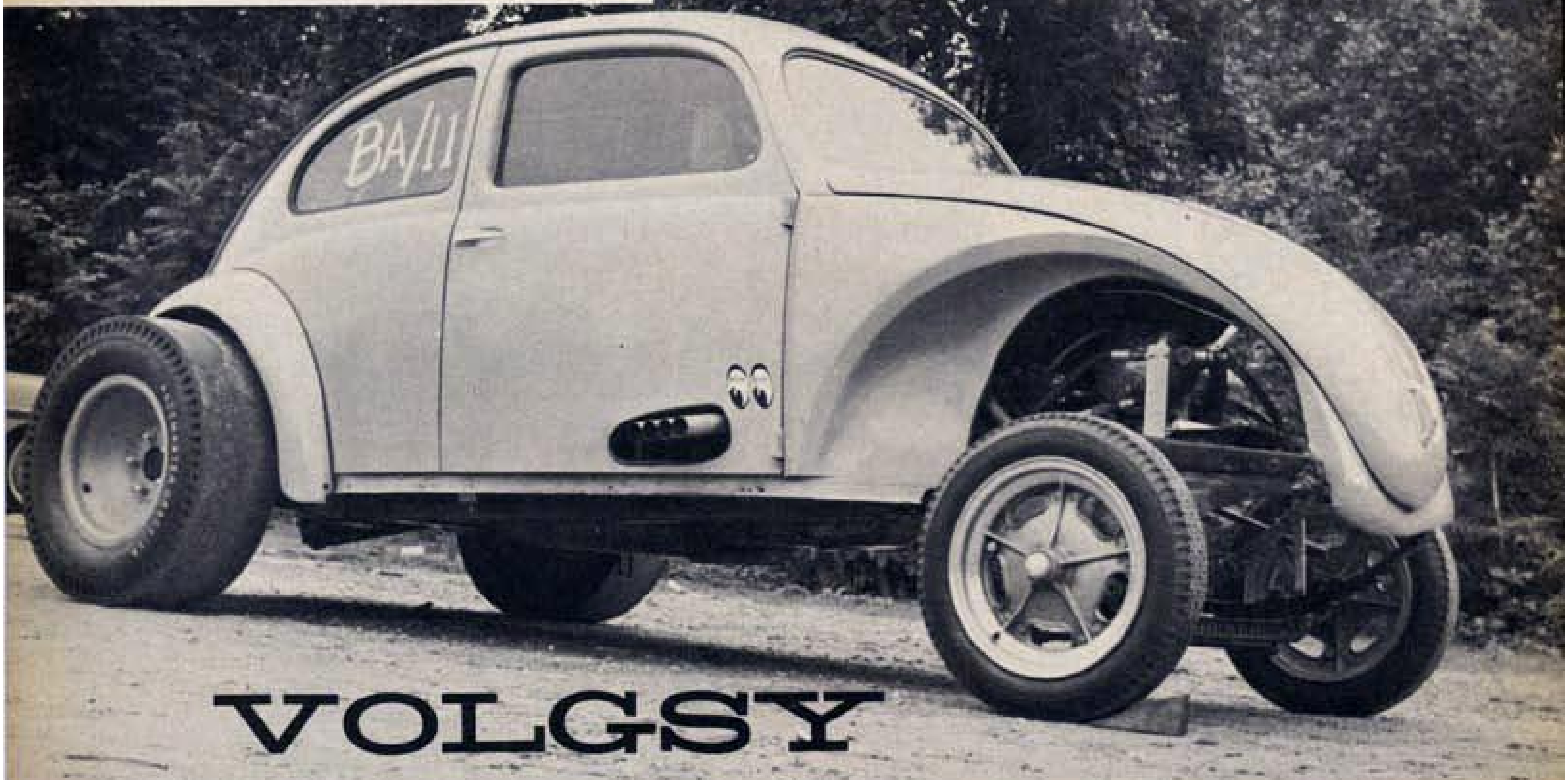
Only hard part on this roadster is the tank mount in the rear. It can be made by using the Aurora '22 roadster bucket, floor body panel, and tank mounting brackets from Revell's "Tweedy Pie." The floor body panel is shortened so that the part that extends beyond the back of the roadster is just as long as the Tweedy Pie tank mounts. All these are assembled and are molded and filled.



1. BODY—Aurora '22 "T" roadster
2. FRAME—Aurora '22 "T" roadster shortened to fit after tank mounting has been made.
3. ENGINE—Revell (c1106) Pontiac V-8 use Tri-carb set-up
4. FRONT-END AND DRAG LINK—Revell (c1132) Roadster chassis speed equipment
5. RADIATOR SHELL—AMT "T" kit
6. COWL LAMPS—Aurora "T" kit or Revells "Tweedy Pie"
7. WHEELS—Chromed and reversed from Revell (c1146) Big & little roadster tires and wheels.
8. INTERIOR—Aurora '22 "T" kit part number 2
9. WINDSHIELD AND BRACES—Aurora '22 "T" kit



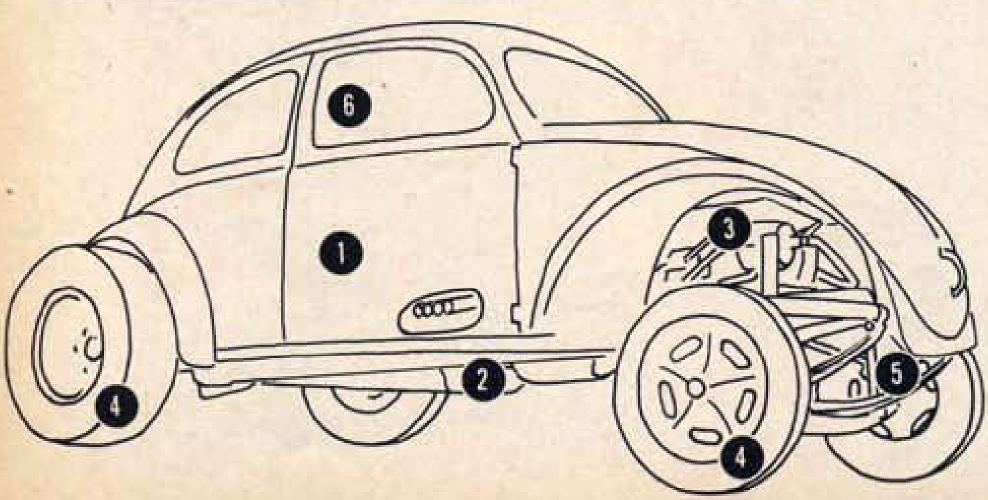




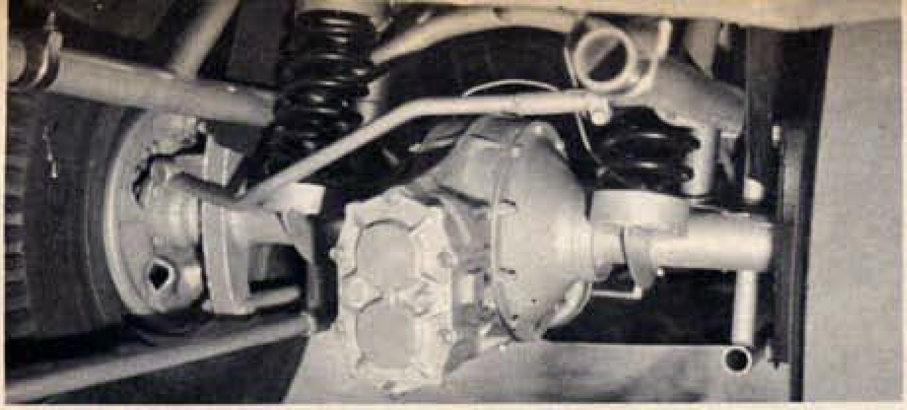
VOLGSY



Assemble the Pyro Volkswagen body after cutting off the front fenders. Mount a solid rear axle to the Revell frame, and use the Revell '41 Willys parts to make the front suspension. Engine is a 352 cubic inch Chevy with Hilborn injectors and wild headers that can be made from scrap plastic. Tint the windows with Pactra Candy Blue paint before cutting them to fit the body.

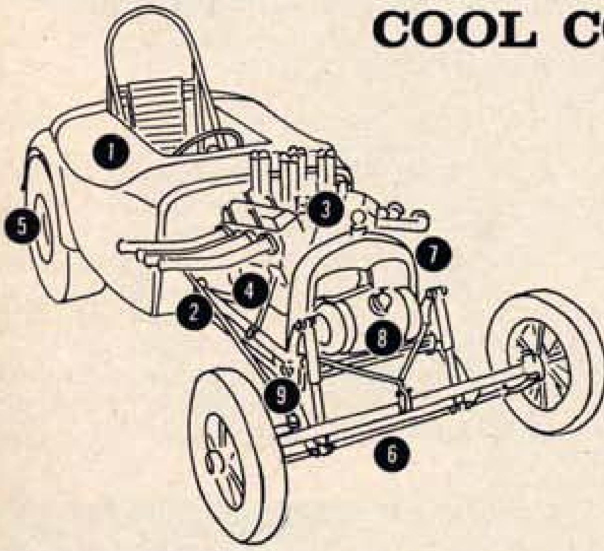


1. BODY — Pyro 98¢ Volkswagen kit.
2. CHASSIS — Revell or AMT tubular frame.
3. Chevy V8 with fuel injection — Revell Custom Car Parts.
4. Front & rear tires and wheels — Revell '41 Willys kit.
5. FRONT SUSPENSION — Revell '41 Willys kit.
6. WINDOWS — Blue tinted celluloid.



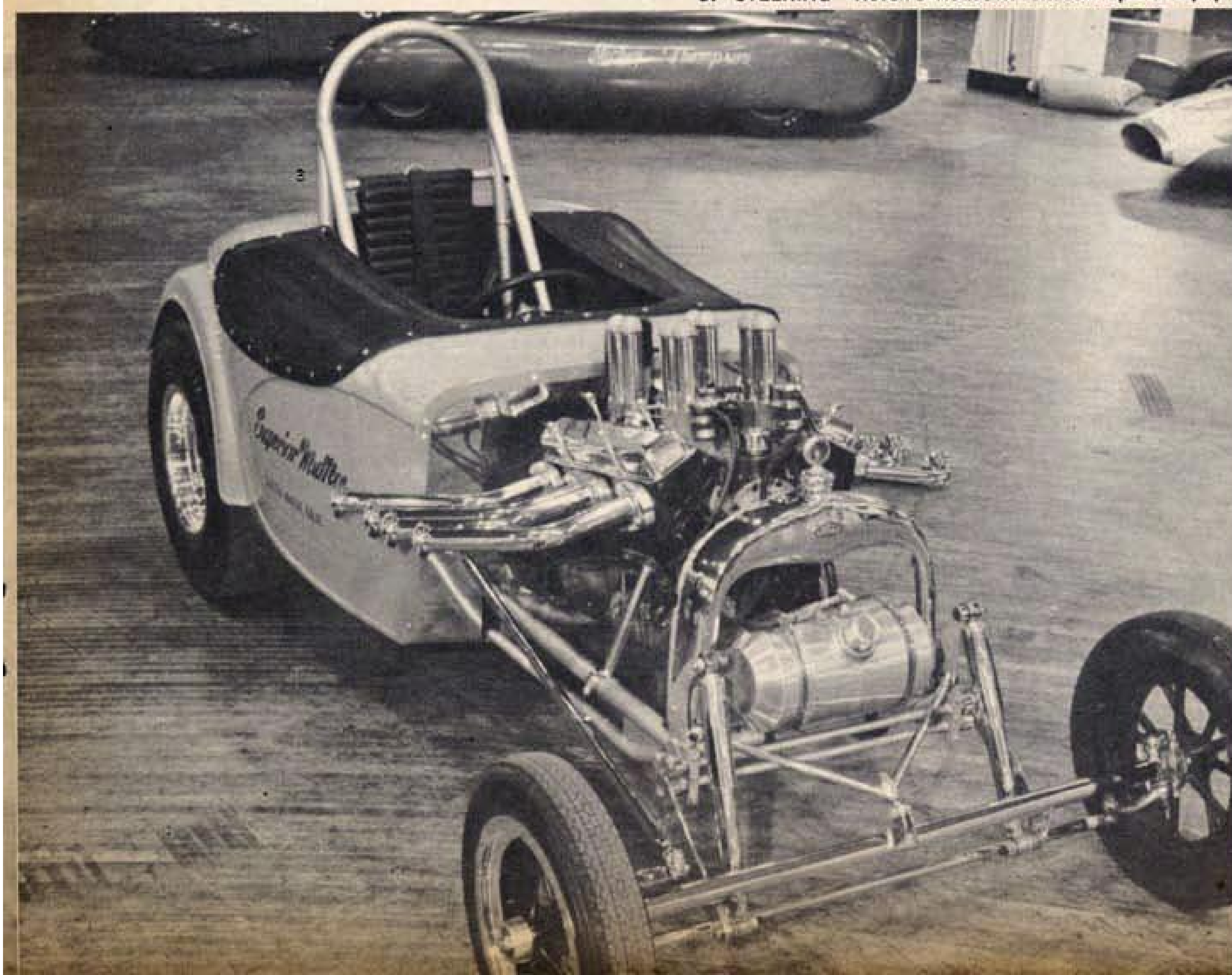


COOL COMPETITION COUPE



The full-size version of this bright competition roadster has already turned in times of 147 mph in 10.2 seconds on straight alky and 133.90 mph in 10.49 seconds on gas. Owners of this car feel that their unique rear suspension using coil springs, gives the car a much better bite.

1. BODY—Revell's Bantam painted orange, cover is black.
2. FRAME—Revell's tubular roadster frame, ROLL-CAGE-AMT Drag frame.
3. ENGINE—Revell's Chevy with Buick injection unit.
4. ENGINE MOUNTS—Made from thin chrome runners.
5. REAR WHEELS—Revell's slicks with spoke mags, centers painted black.
   Front Wheels are from AMT's Double Dragster kit.
6. AXLES—Rear, Revell's shock assembly from Roadster Chassis speed equipment. Front axle is Revell's Tube axle.
7. GRILL—AMT's Ala kart kit '29 A.
8. TANK—Monogram's Sizzler Kit.
9. STEERING—Revell's Roadster Chassis speed equipment.



TREASURE in the TRUNK

By Bob Wagner

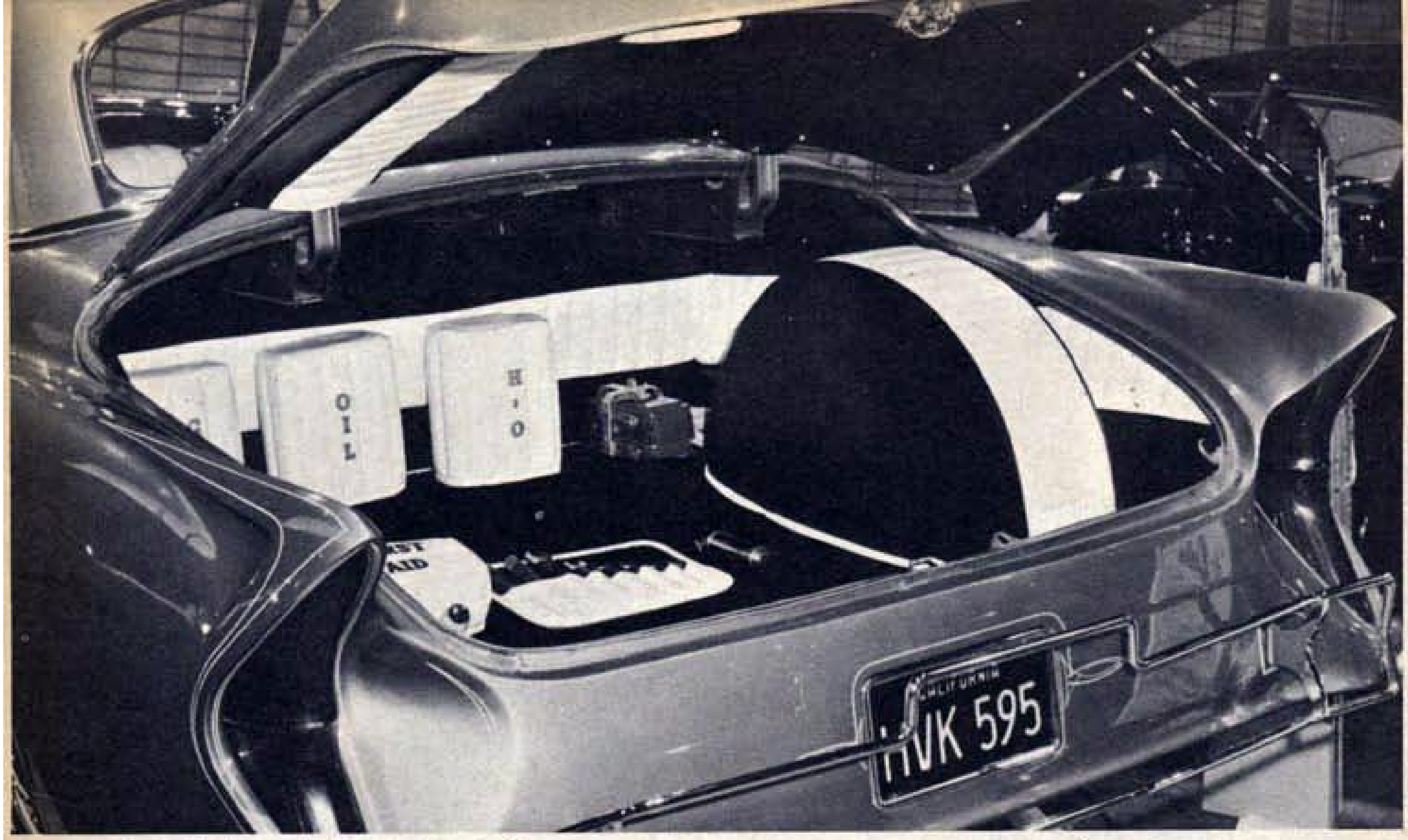
Detailing your truck can garner you those extra points at model shows. On some of the cars now available trunks open and close but on older kits, trunk lids will have to be cut open and a trunk compartment built out of balsa wood or stiff cardboard added. Building the trunk area will be the most difficult of this whole operation. Pieces for trunk must be cut and test fitted and possibly recut to obtain desired fit.

Trunk upholstering should be done with material similar to that used for the interior such as vinyl, velvet ribbon and corduroy. Color scheme should remain the same as the interior.

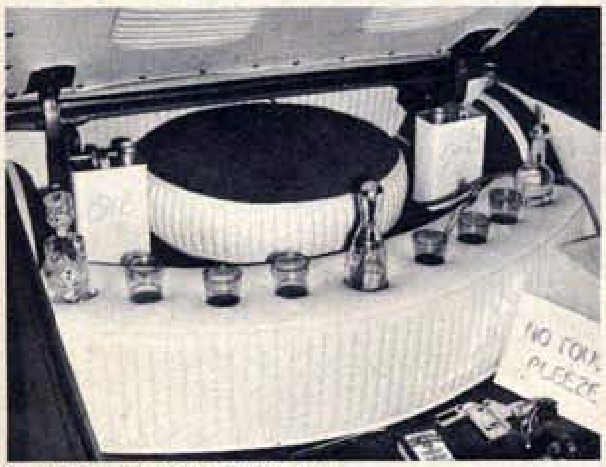
After trunk is neatly upholstered, add the tools and safety equipment. By referring to the pictures on these pages, you can gain ideas on arrangement of items in the trunk. A good kit for tools and safety equipment for your trunk is Revell (C-1157). AMT's '34 Ford pickup is another kit with many tool and safety items to dress up your trunk. This kit also offers road flares. Your trunk should also contain a spare tire. A tire cover can be made out of the material used to upholster your trunk. Material should be neatly glued to tire, and should cover complete tire. A TV set and tape recorder can also be used to dress up your trunk. To light your TV, cut out screen area and replace it with a Viewmaster picture. Cut picture to fit screen area with slight overlap for glue. Place a grain-of-wheat lamp behind piture and presto, you have a working TV.



Well upholstered trunk, with tools and safety equipment on display, adds extra custom touch.



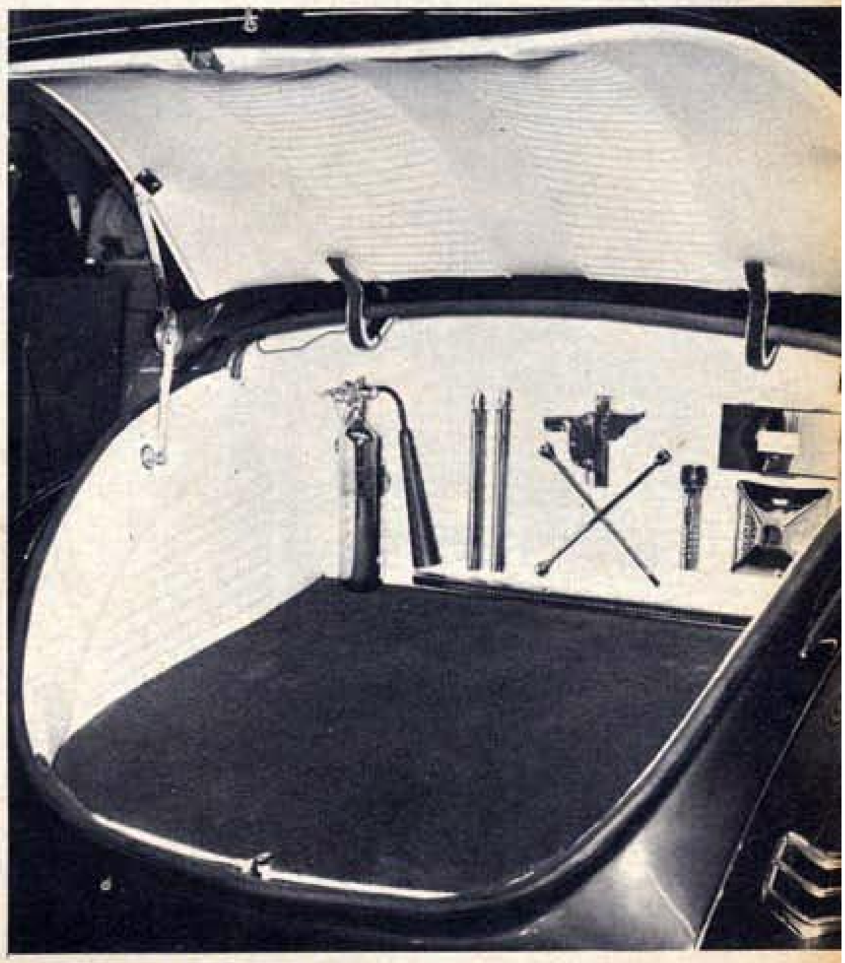
Spare tire is completely upholstered with rolls and carpeting. Gas, oil and water cans are also covered.



Custom layout with built-in bar also features safety equipment on display.

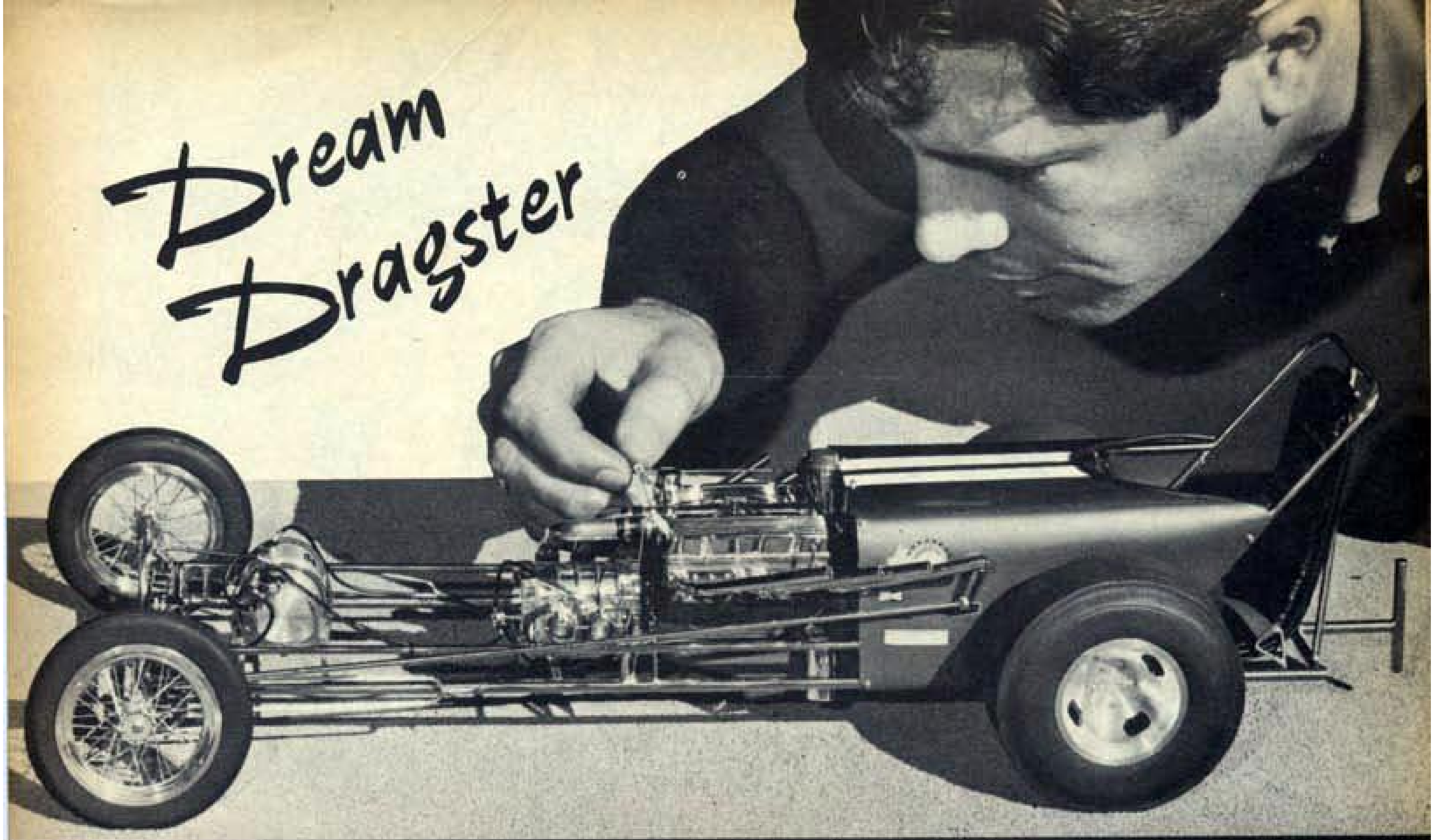


A place for everything and everything in its place in this array of tool and safety items.

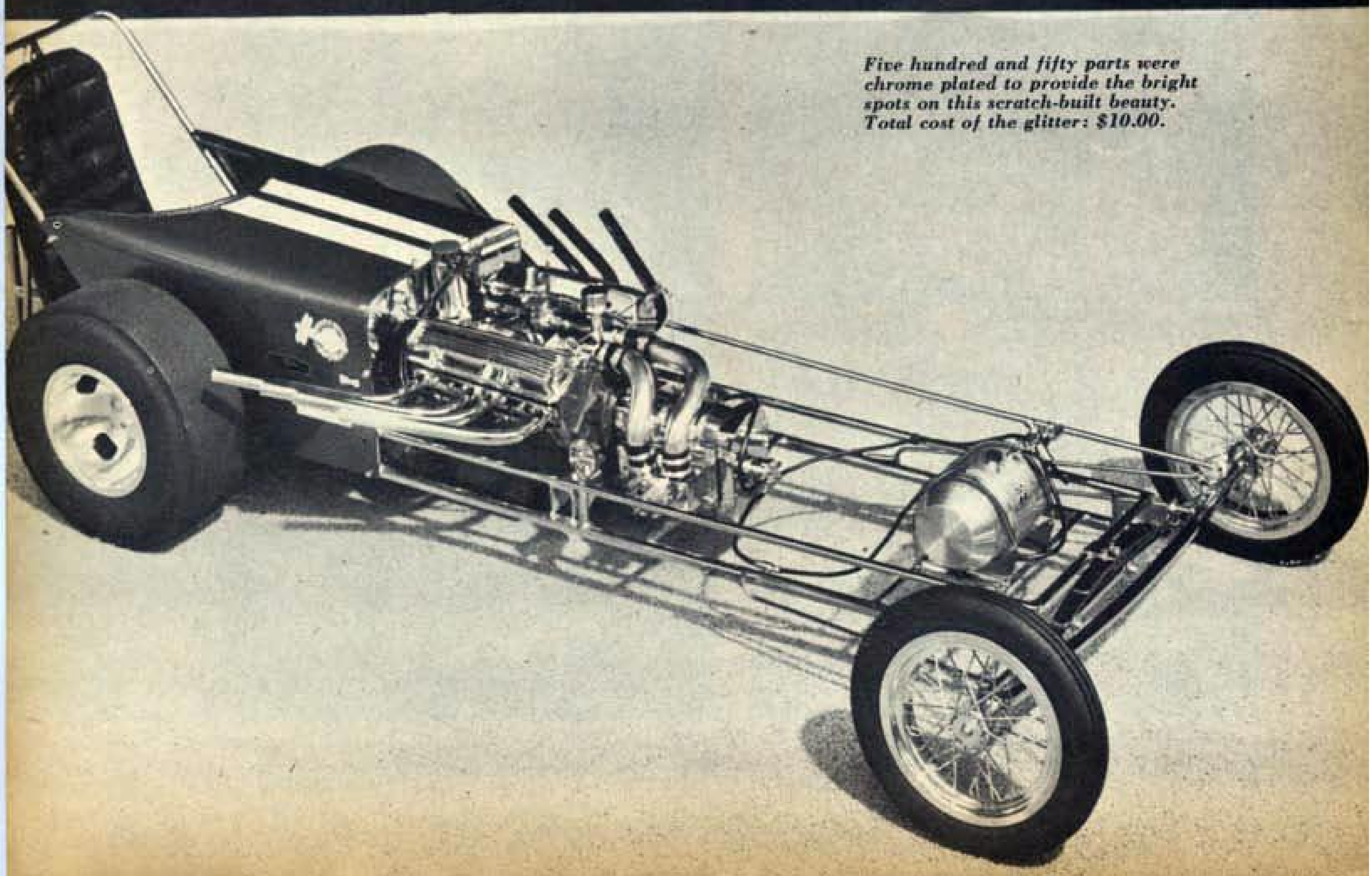


Plush carpeting in the trunk of this '40 Ford points to displayed items on upholstered interior.

Dream Dragster



Here's How A Scratch-Building Expert Makes



Five hundred and fifty parts were chrome plated to provide the bright spots on this scratch-built beauty. Total cost of the glitter: $10.00.

Using the Monogram GMC-blown Chevy mill as a pattern, Oreck built a plaster mold, then cast his own engine from 50/50 lead-tin bar solder.



Few builders have the patience to take the pains and the 1200 man-hours that Don Oreck did in constructing this scratch-built Chevy-engined rail, but the end result is a real showpiece, one that Oreck exhibits in West Coast hobby shops.

Oreck worked from magazine photos of various dragsters, building it to no special scale, but keeping it proportioned to the engine. The car's ultimate dimensions include 13½-inch wheelbase, seven-inch front tread, 5½-inch rear, four inches to top of cowl, and 5-9/16 to the top of the roll bar.

The frame is of brass tubing available in hobby stores. Size varies between 1/8- and 5/32-inch, with joints soldered and sanded smooth. For smooth, even bends, the tubing was shaped with a torch. The body is from shim brass.

Threaded fasteners are model items, sizes 00-90, 0-80 and 1-72, while the hex fittings on the fuel lines were formed by filing a piece of brass tubing to a hexagon, cutting it off in 1/16-inch lengths. Fuel lines are insulated electrical wire

A Great One



A jeweler's lathe was employed to turn tires, wheels and fuel tank. Oreck's workshop occupies a corner of his bedroom.



Handmade wheels were constructed with piano wire spokes glued into rims then laced into hubs and bent over with pliers.

(wire removed in some cases) with smooth bends running to the fuel tank which was turned from a solid chunk of aluminum. The tank is 1¼-inches in diameter, 1-7/8 long.

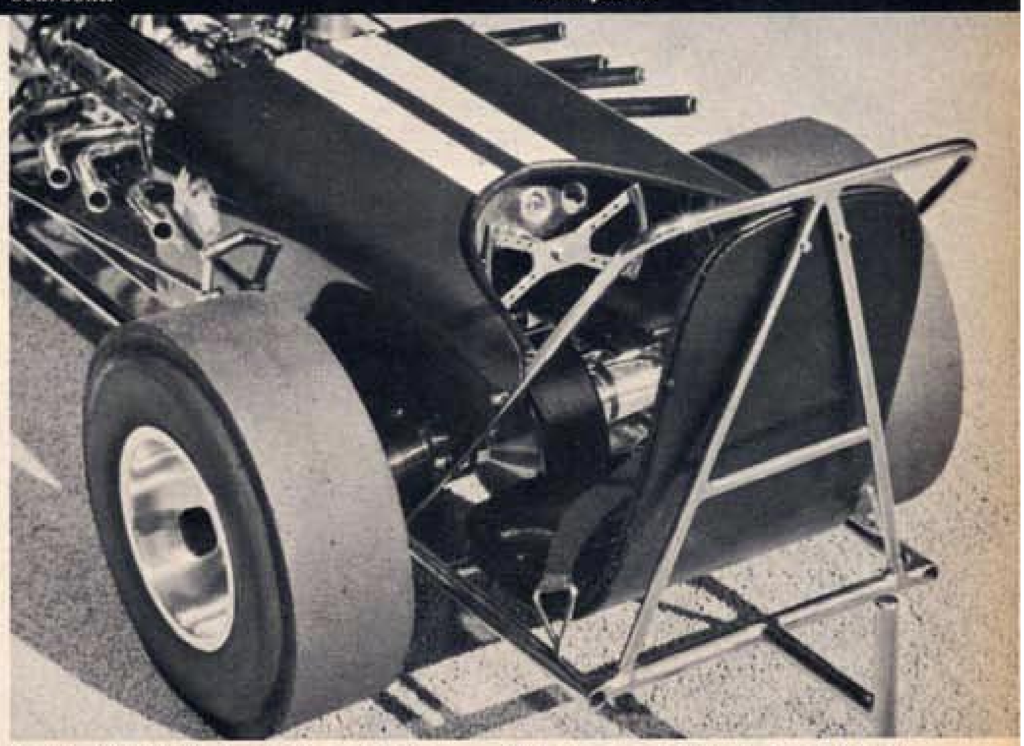
Building the front wheels required a jeweler's lathe so that the spoke holes could be indexed on the proper centers in the hub and rim. Piano wire spokes were glued into the 2-3/8-inch-diameter rims, laced into the hubs and bent over with needle-nose pliers. The rear wheels, 1-15/16-inch diameter, were machined from aluminum. To construct the tires, Oreck turned half a tire in wood, made a female mold from plaster, cast the tires one-half at a time with Smooth-On 201, a rubber-with-catalyst compound available from hobby shops. He chilled the front tires in dry ice before lathe-turning the grooves.

Hose connections are plastic tape with bits of aluminum foil simulating clamps; seat belt is the back side of a piece of oil cloth; and seats are real leather, very fine grain, stitched in a tuck-and-roll pattern. It cost Oreck about $10 to have some 550 tiny pieces chrome plated. Biggest task was stringing them on a wire to take to the plater. Nuts, bolts and screws were nickel plated.

Other little construction tricks include the dash instruments, made by clipping photos from magazine illustrations, framing them with model ship portholes.

As for finish, Oreck does not recommend metallics because the flakes of silver or gold loom out of scale with the car. He used green model airplane lacquer, added miniature trade name decals in appropriate places.

In spite of the model's precision, Don made a major goof in design, which sharp-eyed readers have surely spotted by now. The roll bar would never pass tech inspection at a well-run drag strip.



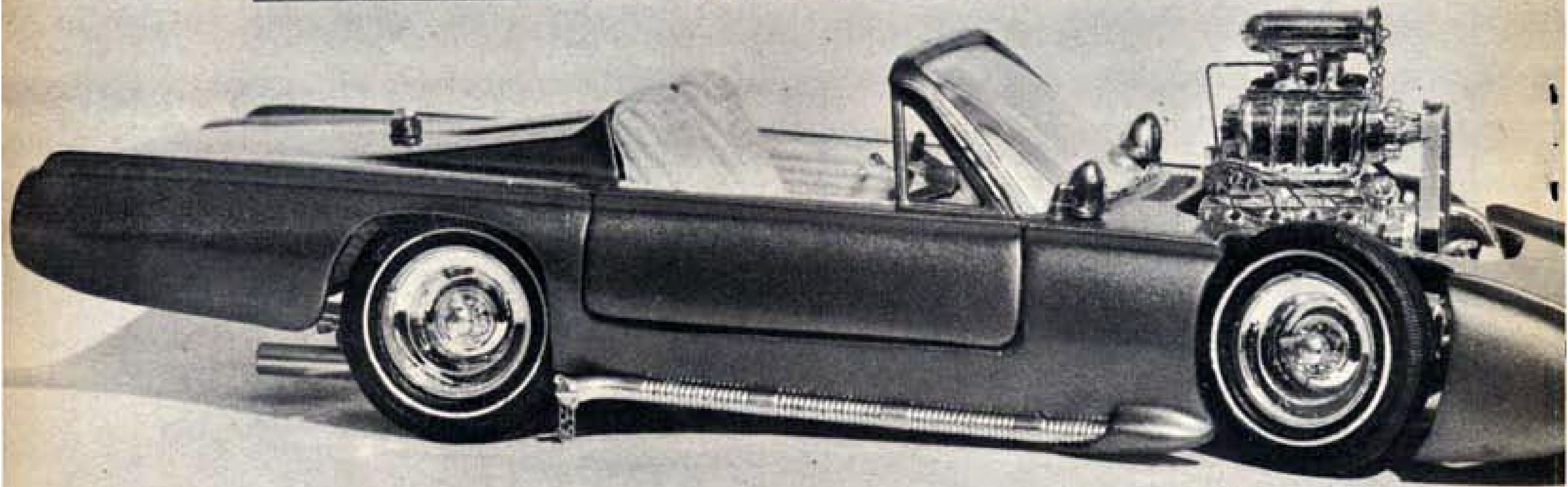
Slicks were cast in a wood mold from a special rubber-with-catalyst compound available at hobby shops. Seat belt is the back of a piece of oil cloth.

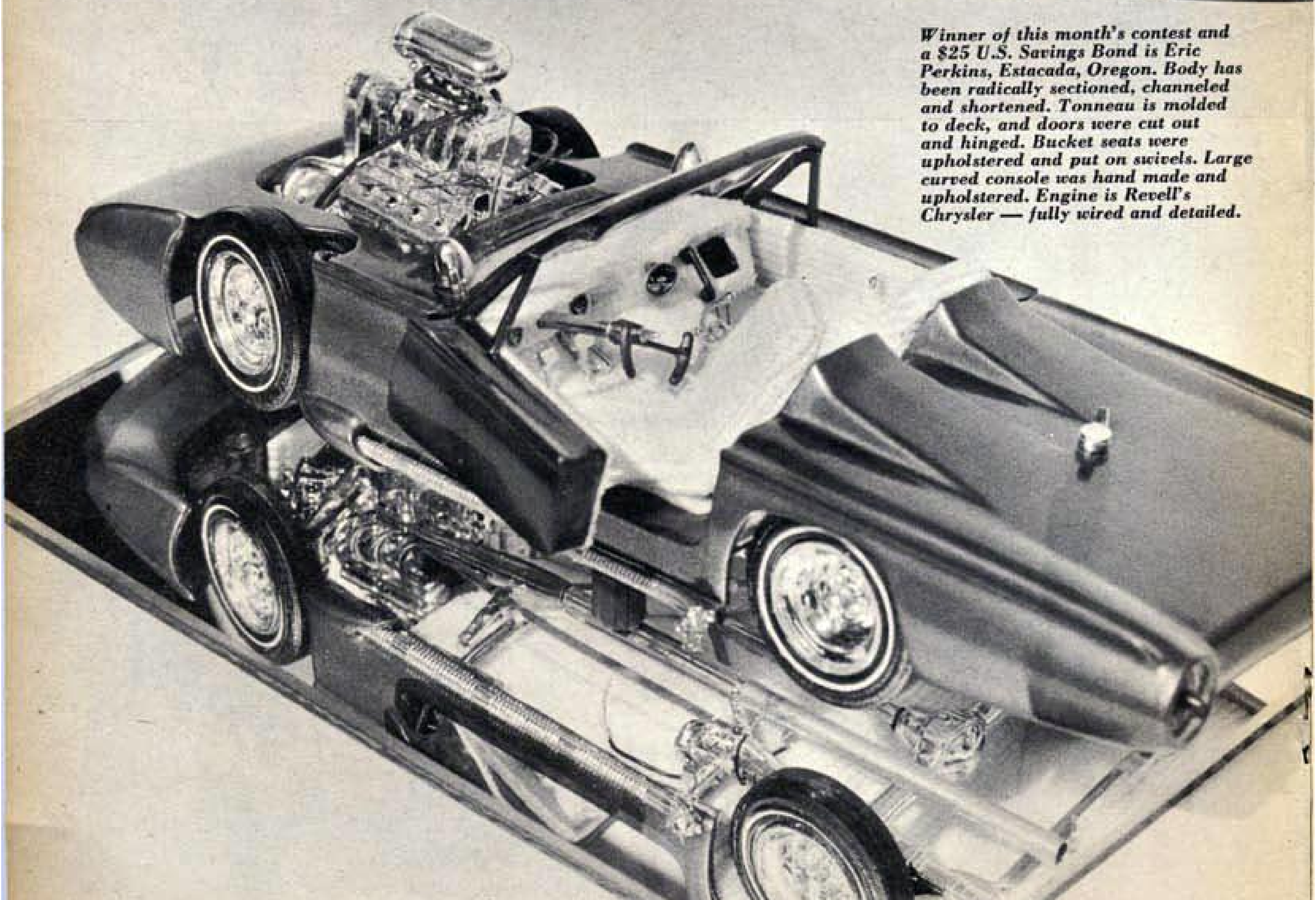
McMODEL the MASTER BUILDER



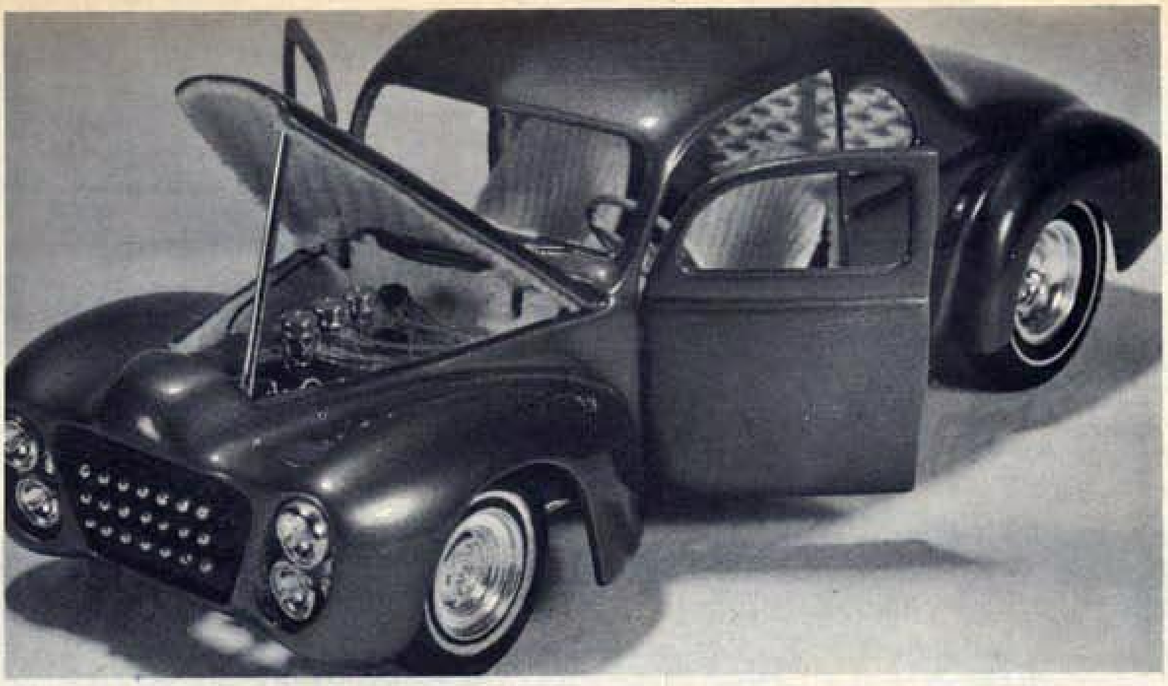

HEY! WHY NOT GIVE A BUNCH OF MODEL CAR KITS TO UNDERPRIVILEGED KIDS!
YEAH, STARTIN' WITH UNDERPRIVILEGED ME?
WE'LL GET THE HOBBY SHOP TO DONATE SOME MODELS
THOSE POOR KIDS WILL SURE BE HAPPY!
RISTMAS MORNING
COME AND GET 'EM ... MODELS FOR EVERYONE!
OH BOY!
Tough!
YEA!
WOW!!
OU A GOOD
TO GIVE SUCH
IDS ON
GOLLY, IT SURE IS NICE TO BE ABLE TO MAKE THESE GUYS SO HAPPY ON CHRISTMAS!
McMODEL SALUTES
The SLOT RODDERS
PLAINFIELD, IND.
CORONA CUSTOMS
CORONA, N.Y.
The FIRE GODS
HARDIN, TEXAS
The CREATORS
CALISTOGA, CALIF.

MCS Contest Winners

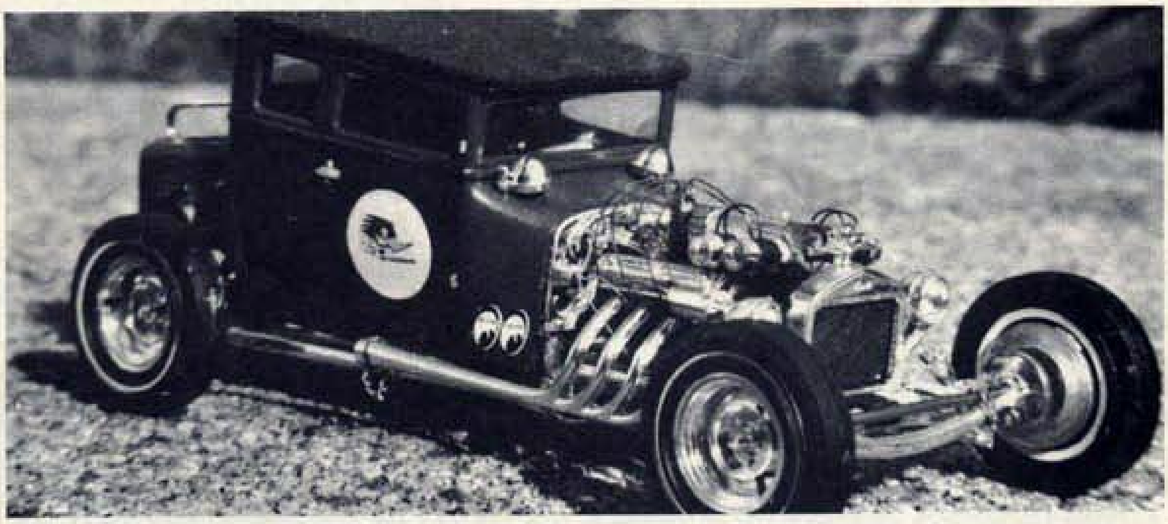




Winner of this month's contest and a $25 U.S. Savings Bond is Eric Perkins, Estacada, Oregon. Body has been radically sectioned, channeled and shortened. Tonneau is molded to deck, and doors were cut out and hinged. Bucket seats were upholstered and put on swivels. Large curved console was hand made and upholstered. Engine is Revell's Chrysler — fully wired and detailed.



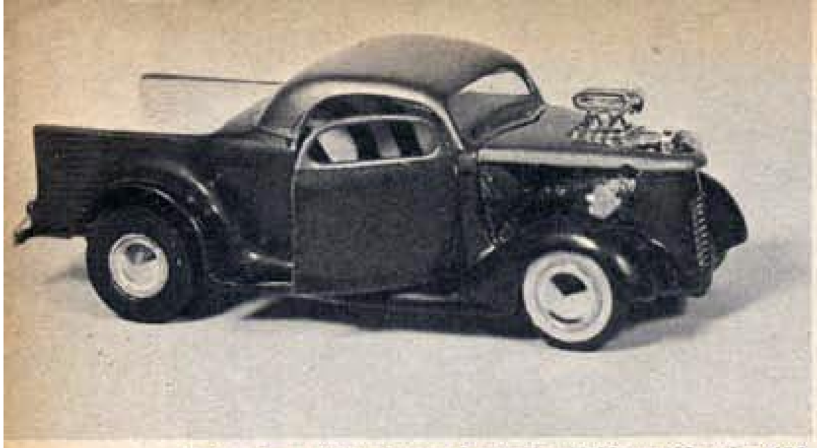
This '40 Ford coupe built by Wayne King, Tulsa, Oklahoma ran a very close second. Fenders were molded to the AMT body and taillights hang down from rear fenders. Interior holds '25 T bucket seats and safety items. Buick engine is wired.



Harold Etterman, from Agawam, Massachusetts, started with a '25 Model T Ford Roadster, added a competition version Lincoln engine with a fan belt and generator substituted for the blower belt. Body is sprayed red. Roof houses sunken antenna.



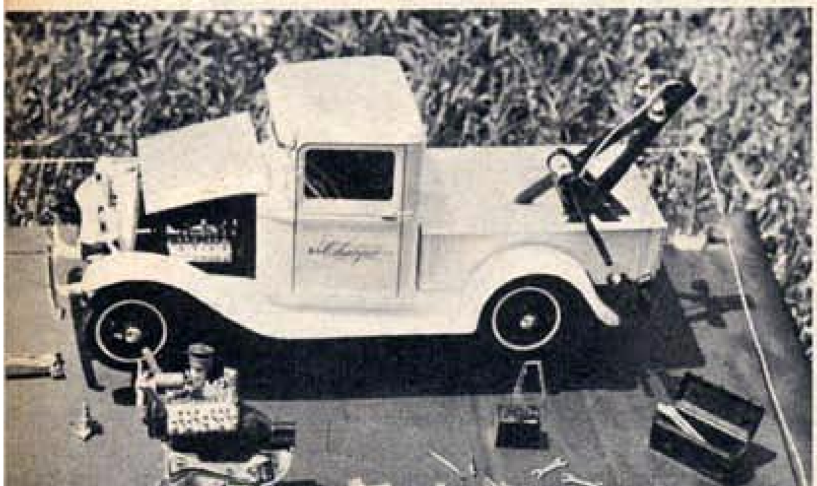
It's a Pontiac! This model, by Mike Chervenak, Tacoma, Wash., was on display at the Seattle World's Fair and has also won four First Place Awards, Two Best of Show Awards, one Second and one Third place in other competition.



Driven by a fully chromed, wired and blown Chrysler 413 cubic inch engine, this car was originally a coupe with rumble seat, but Michael Palmieri chopped away the rear and formed the box from balsa.



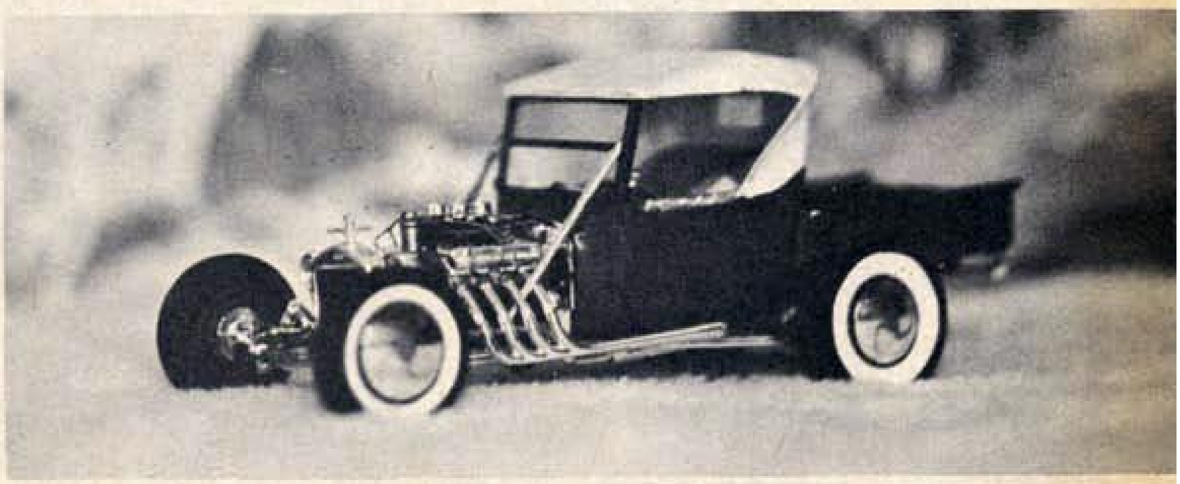
Based on the Black Widow kit, the "bug" created by Gary Ball, from Toronto, Ontario, Canada, features two pontiac engines from the Challenger I. Many different kits were used to back up design ideas.





Jim Corwin sends us his customized 1963 Corvette with XKE Jaguar wire wheels. Front and rear end have been redesigned and car is painted a bright insignia red. An AMT '57 Chevy 409 is under the hood.

Joe B. Croxton, Lancaster, S.C. demonstrates an unusual display setup for his 1934 Ford Pickup. Bright red satin cord is used to accent his silver and white stand.

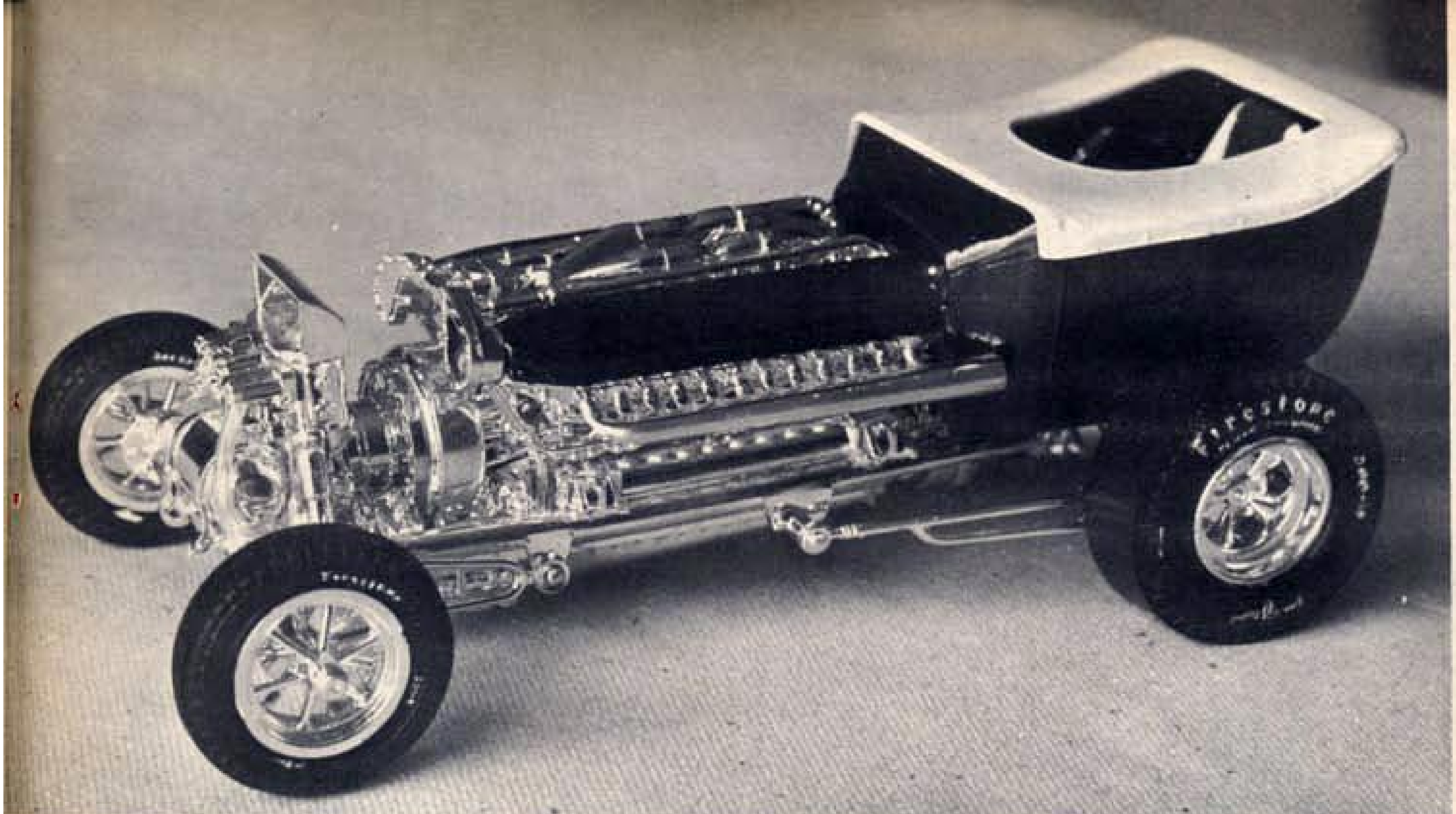


Pickup bed on this AMT '25 T has been molded to the roadster body by Airman 1st Class Rod Parr, APO 13, N.Y. Interior mounts '36 dash with full array of gauges and Impala wheel. It's finished in 12 coats of Candy Red over a Gold base.





Both fins were completely removed and rear end was molded with putty, on this '57 T-Bird. Interior, hood, and engine compartment were all upholstered by builder Rick Bowen, from Seymour, Conn. Engine is a completely wired Chrysler. Paint job is metallic blue.



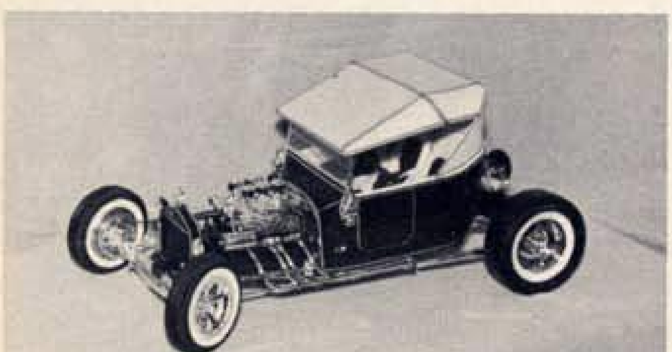
To get the huge Allison in a frame built for a V-8, Mike Connally, from Ft. Worth, Texas, bowed the frame, remounted the torsion bars and reversed the front axle. To add the T body, Mike cut out the firewall and cut slots in the wheel wells to make room for the rear shocks. He then filled in the wells with putty for improved looks.



Demonstrating showmanship, Don S. Croxton, from Lancaster South Carolina, uses a white satin display stand to exhibit his model. Light green pin striping over body adds professional touch.



Much like the real thing, this AMT '40 Ford by Jack Harner, New London, Ohio, features an all chrome, fully wired Chrysler 421. Brakes are also fully wired along with complete fuel line.



Featured on this Big T are: chrome wheels, six carbs, flocked interior in red, white and black. Built by Larry Ingersole, from Newton, Iowa, model is finished in black with white pin striping.



Tempest frame and body were cut so just the right portions were removed. Sought by Craig Rogers, Elgin, Illinois, was Sting Ray dimensions with a hint of European styling. Engine is stock Tempest-wired.

HIT THE SILK

Three new ideas on building an authentic chute for your drag wagon.

In the early days of drag racing cars didn't go very fast, so a regular automobile brake was all that was needed to stop them at the end of the quarter mile.

As time progressed, dragsters also progressed and increased their speeds. Spot brakes were then introduced for big dragsters in an effort to get better braking.

Dragster speeds are now in the low 190 MPH range, and most drag strips now require all cars turning 140 MPH or better to have a drag chute.

These instructions will show you how to make the cross form (cruciform), the security chute and the ring slot drag chute.

Rayon satin back crepe material, flat crepe, or raw silk are excellent materials to work with when making a drag chute. Chiffon and crepe de Chine can be used.

To make the cross form chute, cut out two pieces of material eight inches long and a little more than three inches wide. Each piece of material should have three panels with scalloped ends. The two pieces are laid over each other at right angles and centered so that the same amount of material extends in each direction. It is helpful to pin the pieces of material in place before sewing, this helps keep it in place, Stitch along the side of each panel, leaving the thread six to seven inches long on each side of the chute as these will be your shroud lines. Be sure and tie a square knot in each of the threads at the edge of the chute to prevent threads from pulling through.

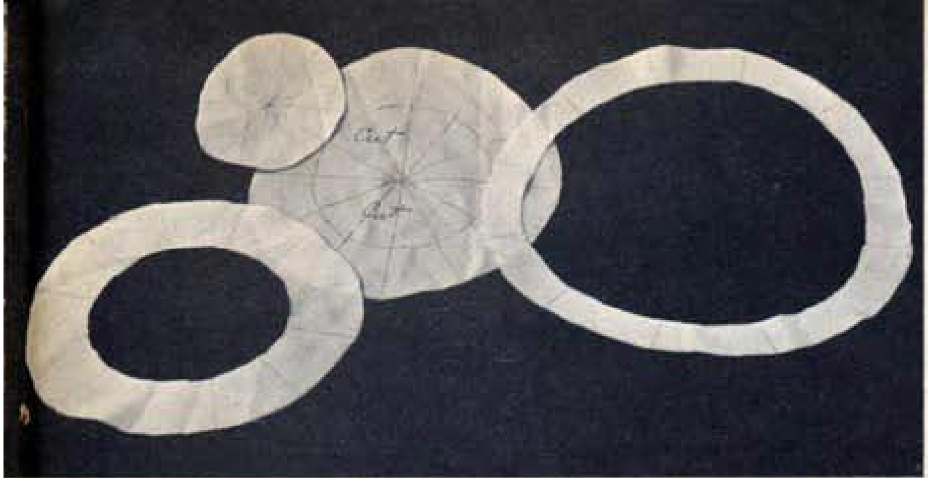
The ring slot parachute is the most difficult of the three to build. This chute is made from three circular pieces. The inner piece should be three inches in diameter. Allow a quarter inch space between it and the next panel which is one and one quarter inches wide. Provide for another quarter inch space, and the final panel is an inch and three quarters in width. These three pieces are folded in halves four times and creased firmly. This divides the circles into sixteenths. The pieces are laid out so that the creases line up with each other. Start on the outside of the larger panel and sew across the creases, across the spaces, through the center and out the other side, remember to leave about six to seven inches of overhang of threads for your shroud lines.

The third and last chute is made by cutting three concentric circles and overlapping them and sewing them together. The first or inner circle is one and three quarter inches in diameter, the second is four and three eighths in diameter, and the third panel is seven inches in diameter.

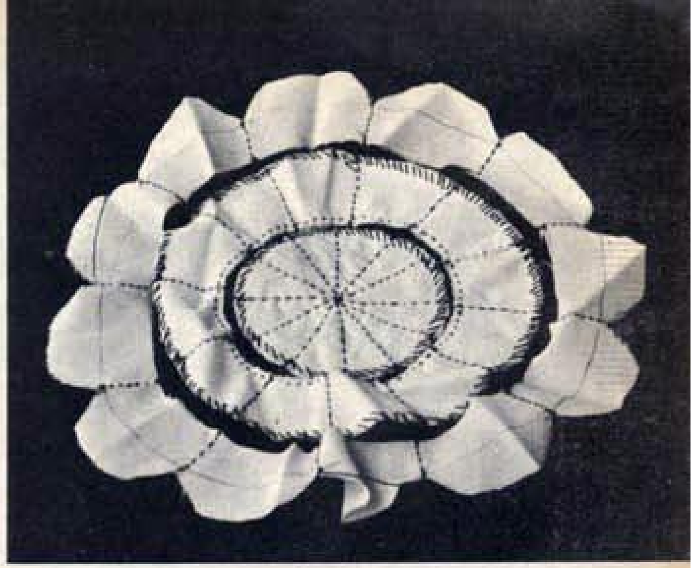
You now fold the material and pattern in half, insert the material and then fold again. The inside diameter of the outside panel is four inches, the inside diameter of the second panel is one and three eighths inches. When the material is inserted in the pattern the inside diameter and outside diameter are both cut at the same time. Allow for a three sixteenths inch overlap when sewing the panels together. Allow as before for overlap of thread for shroud lines. Each shroud should be six inches long. Measure and cut each line to length. Bring all threads together, place a heavy thread in the center and wrap.

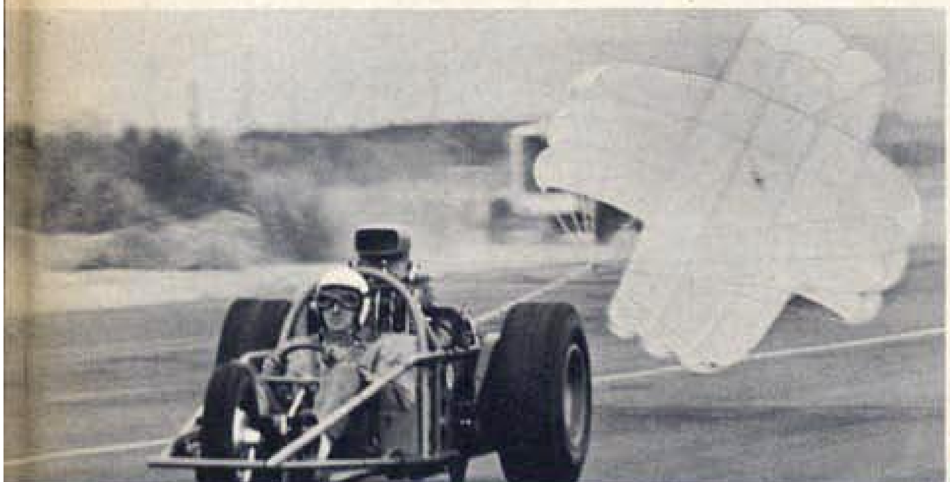
If all else fails, Revell's Attempt I kit contains a plastic chute which can be used in place of making one.



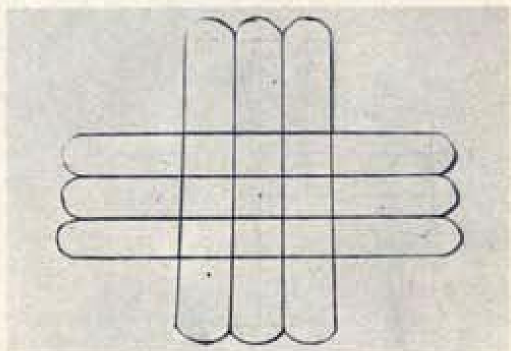


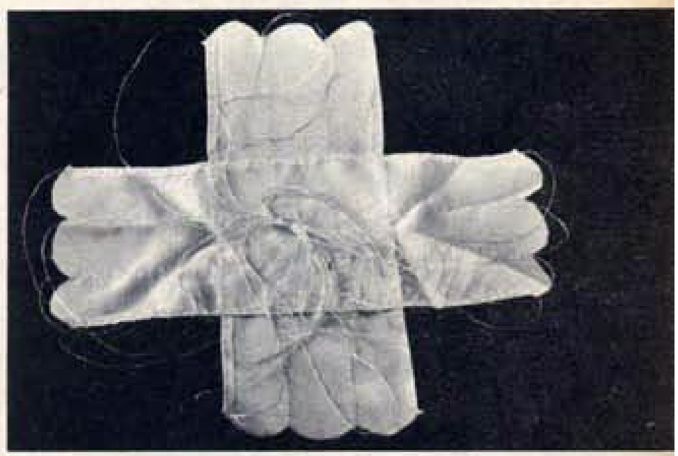
Above are pieces of a ring slot chute before assembly. Assembled chute is shown at right.

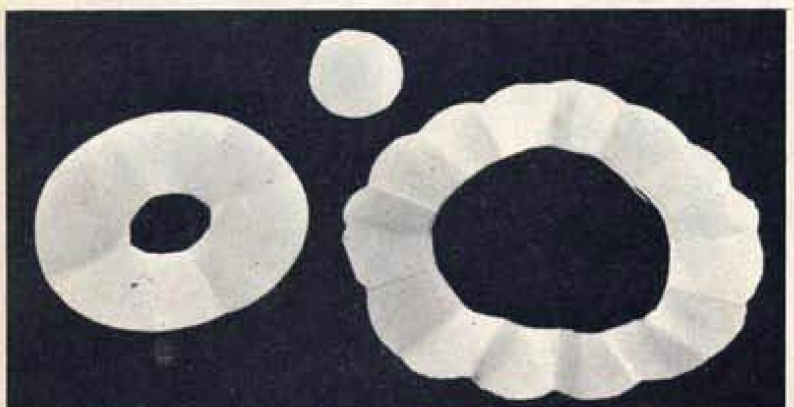




Pictured above is a dragster using the cruciform chute, pattern design and finished chute is shown at right.

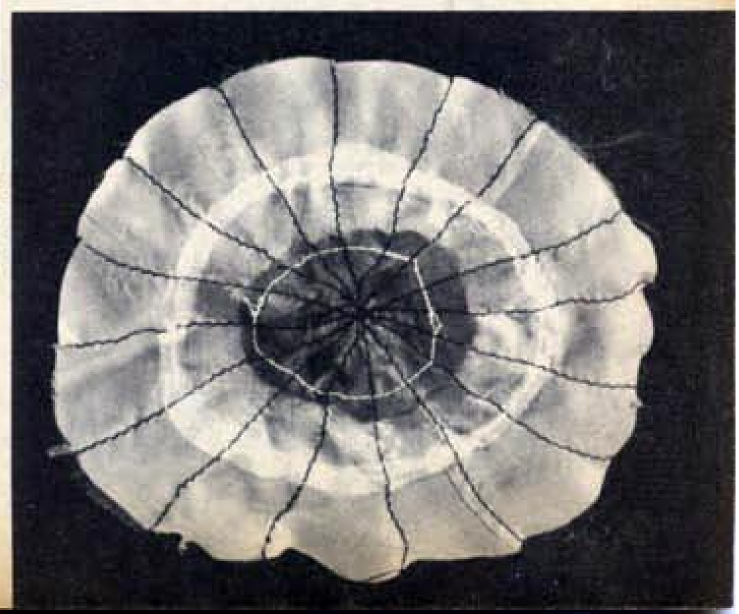


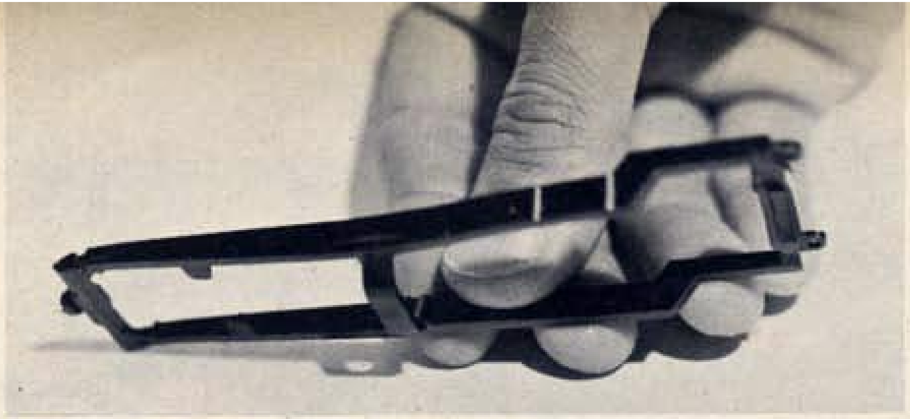




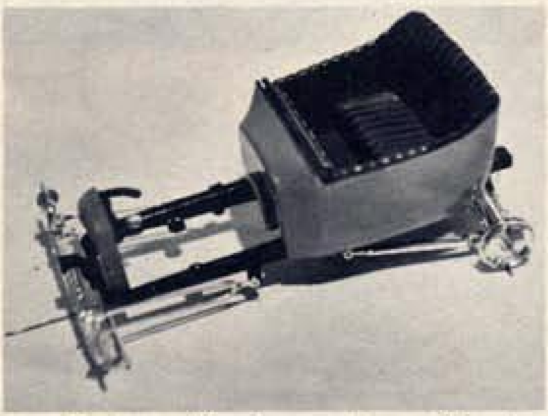


Paper pattern for ring chute is shown above. Proper positioning for pieces is shown at left and finished chute showing stitching is displayed at right.





Frame is marked with wax pencil for sectioning.



Roadster grill and suspension positioned on shortened frame.

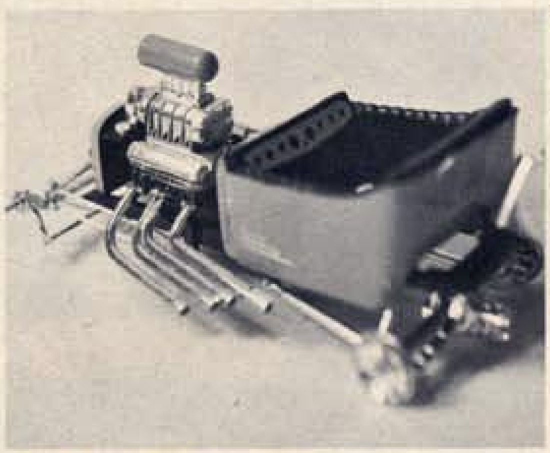
Want something new and different in roadster building? Why not try a short wheelbase roadster? This is the trend you have probably noticed at car shows. A short wheelbase roadster has had the frame extremely shortened.

Revell's two chrome roadster frames already have a quite short wheelbase but can be shortened further if you desire. Same procedure as below is followed only not as much is removed.

AMT is the frame used to build this roadster. First, mark the AMT frame with a wax pencil (available at stationery stores) just in front of the rear kickup. Next, measure along frame amount to be removed. A razor saw is used to remove section, after this has been done, rejoin frame and set aside to dry at least one day.

Radius rods and drive shaft will have to be shortened now that the frame has been brought to its new length. Revell's suspension kit can be used without any alteration to the suspension.

TRY A SHORT WHEELBASE ROADSTER



Small Moon tank mounts to back of roadster.

Completed roadster with top sprayed flat white. Windshield, steering wheel and interior can be added according to taste.





TABLE TOP RACING SECTION



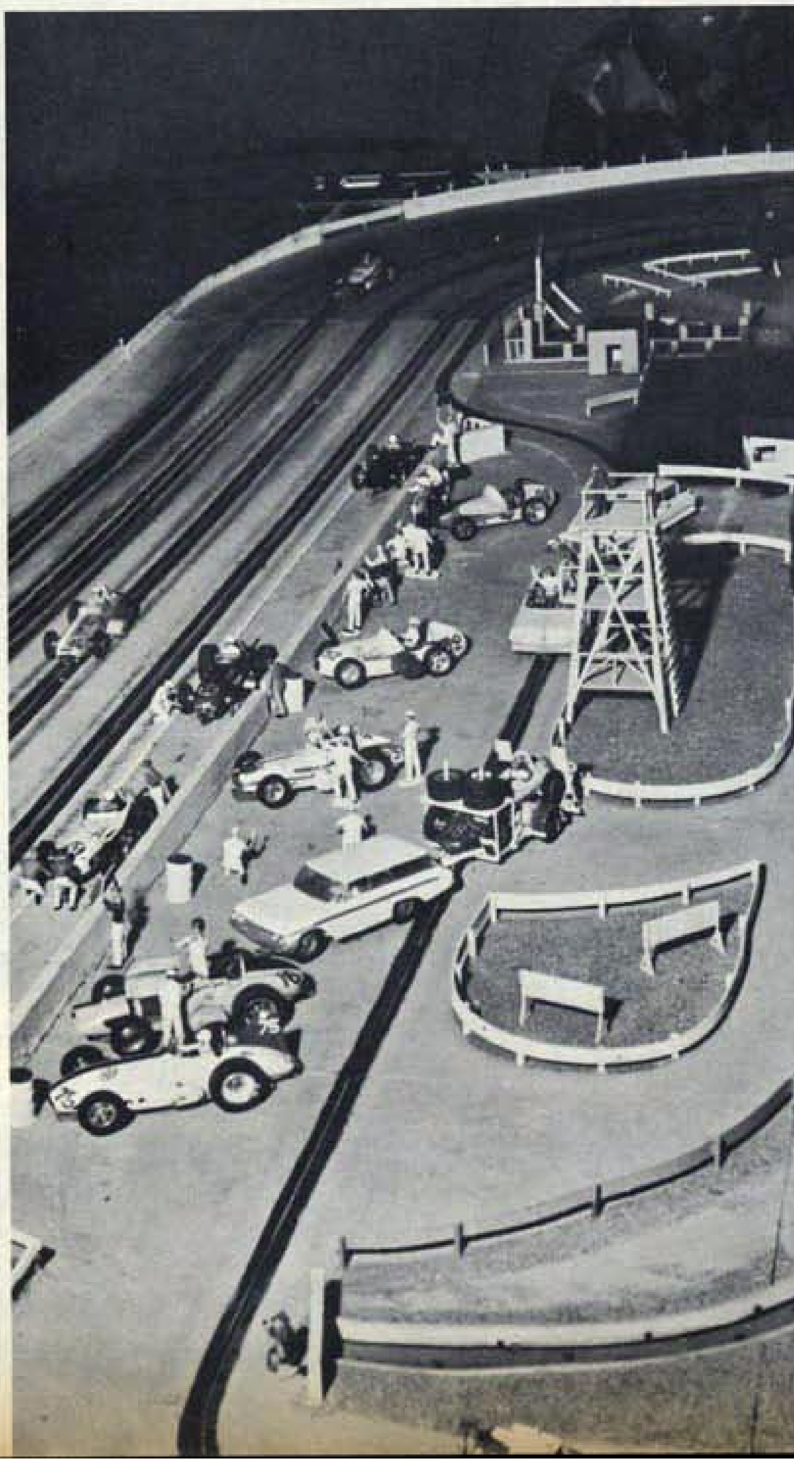
PHOTO CONTEST Each month MCS will award valuable prizes to the readers who submit the best photos of slot racers in action. Send your photos to:

Table Top Photo Contest
Model Car Science
171 Barrington Pl.
Los Angeles 49, Calif.

THIS MONTH'S PHOTO CONTEST WINNER IS NORMAN O. DAVIS, SECRETARY, ECURIE CONCOURS MODEL CAR RACING CLUB, SAN JOSE, CALIF.

"500" THRILLS IN SCALE



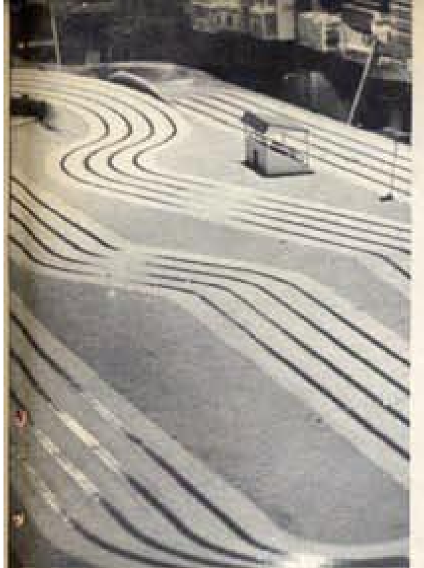


Slot racing that started out as a hobby has become a thriving business in Indianapolis, Indiana, for Bob Clidinst, Jr. Bob now designs prototypes for the various models in the Strombecker road racing line.

Clidinst gets to test his new theories in the basement of his home on a scaled down copy of the Wisconsin State Fair Park's mile track at Milwaukee. His track, "Wilmaukee" is equipped with a signal light system similar to that used on the large tracks. He also has an ambulance which speeds around a special inside track to serious-looking accidents.

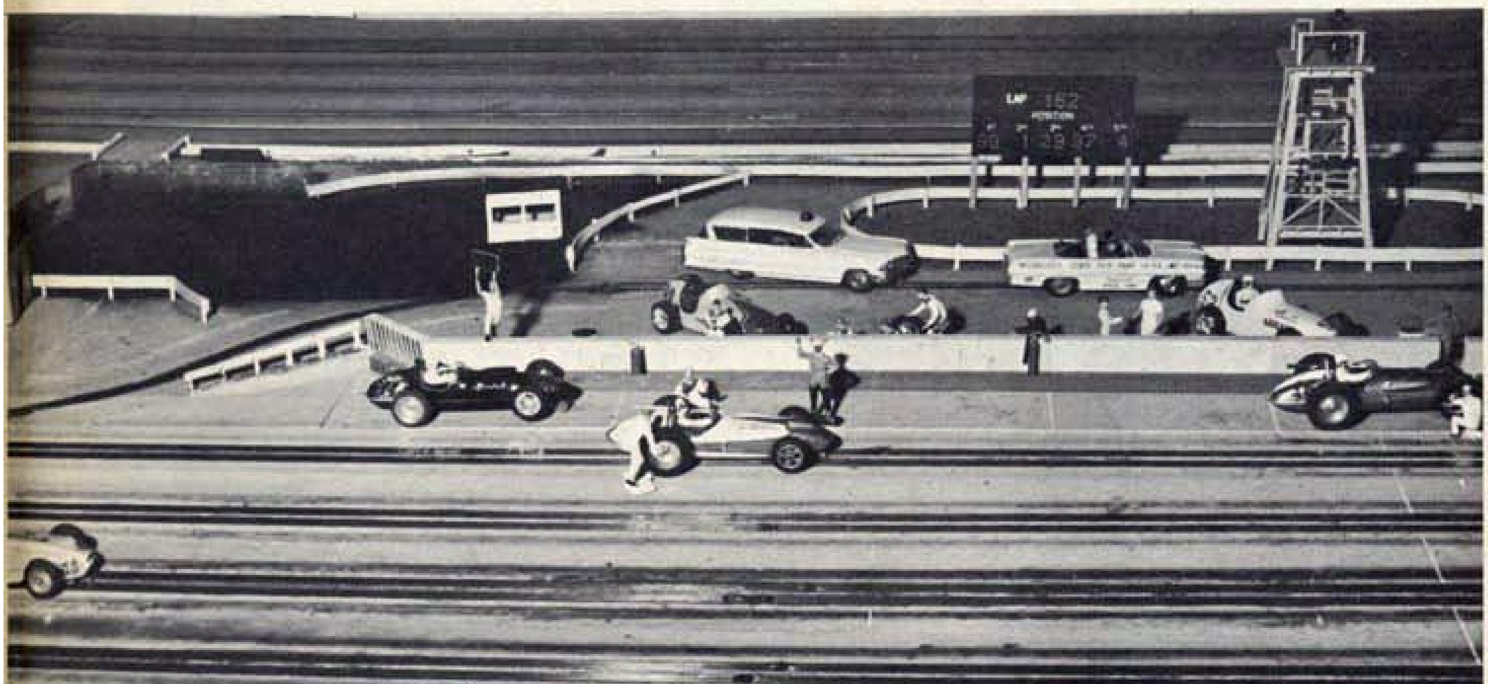
A member of the "racy" group known as the Indianapolis Miniature Racing Association, Bob hits the "scale trail" every Tuesday night at one of the five tracks in the association.

Prime objective of the association is to achieve a close prototype to actual racing on the tracks they duplicate. Aside from the "Wilmaukee" track, the group has tracks modeled after the Indy 500, the Trenton track, the DuQuoin track and the Winchester track.





As many as 75 cars often turn out for an evening's racing at one of the five tracks operated by IMRA members.



This scaled-down version of the Wisconsin State Fair Park mile track at Milwaukee even has an operative model ambulance standing by, and an electric lap counter.

Starting with eight members three years ago, the I.M.R.A. now has 35 members active. These buffs go to just as infinite pains as their USAC counterparts in trying to gain a mechanical advantage over their rivals, and as many as 75 cars often turn out for an evening's racing at one of the tracks.

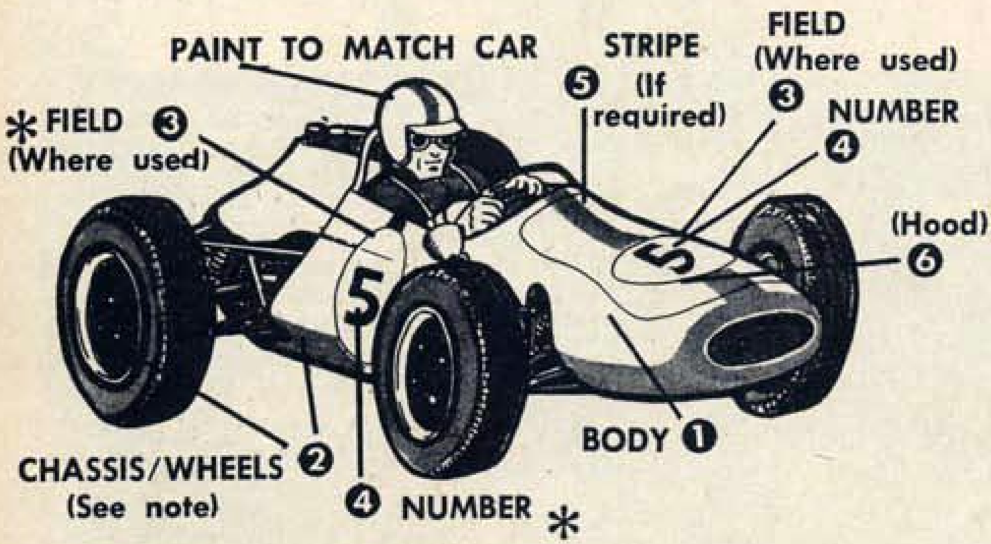


IMRA members meet every week to try their skill on a new course. In keeping with proper racing procedures, time trials are held before the race.

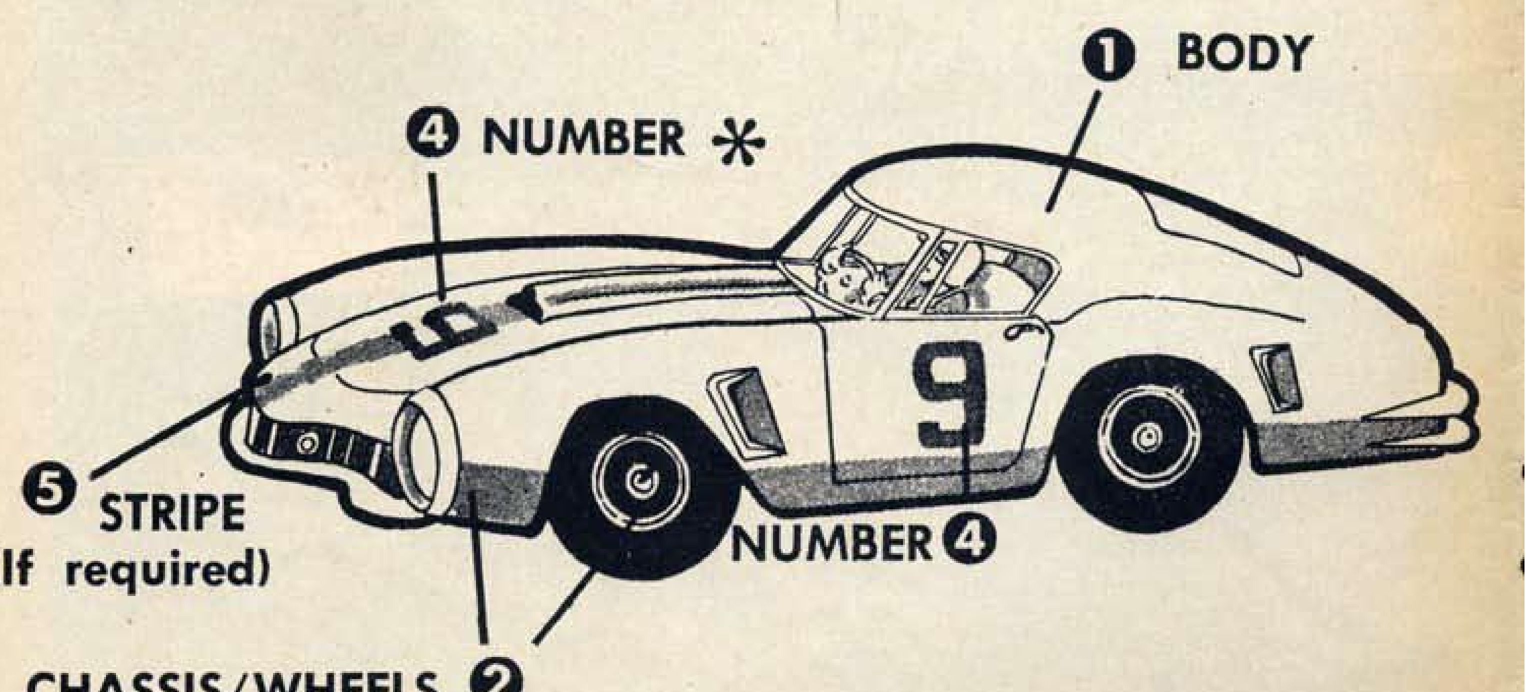
Slot Racer's Work Shop

NEW IDEAS IN RACING MODIFICATIONS

INTERNATIONAL COLOR CODE
F.I.A. (International Racing Rules)



For the slot racing devotee desiring authenticity, the C. J. Ulrich Co., Inc., has produced a guide sheet that provides detailed instructions on international racing colors for model bodies. Authentic colors for each major part are clearly shown. Color schemes for 24 countries are listed. Available at hobby shops or from Ulrich Co., 11423 Vanowen St., Unit 28, North Hollywood, Calif., for 10¢.



UNITED STATES...(1) white S4 (2) white S4 (3) white S4 (on hood) (4) blue S1 (5) blue S1 (6) white S4

GT. BRITAIN.........(1) green S5 (2) green S5 (3) none (4) white S4 (5) none (6) green S5

OPERATING STOP LIGHTS

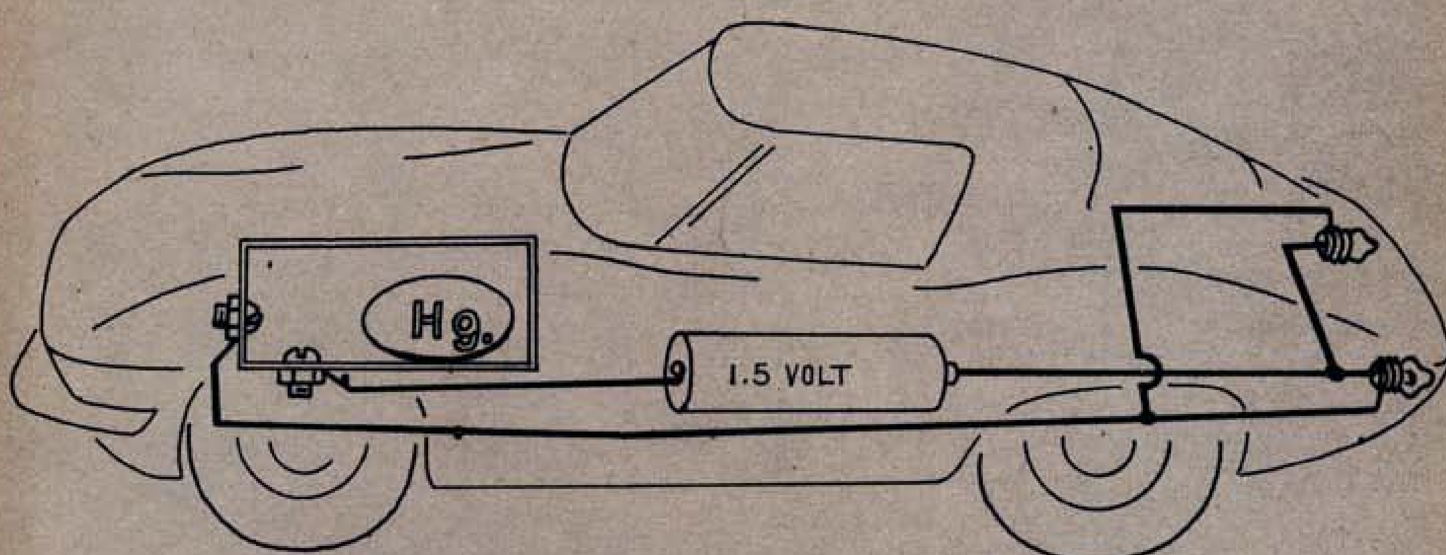
A very realistic operating stoplight switch can be made and installed in sports or GT class slot racers with just a little added effort.

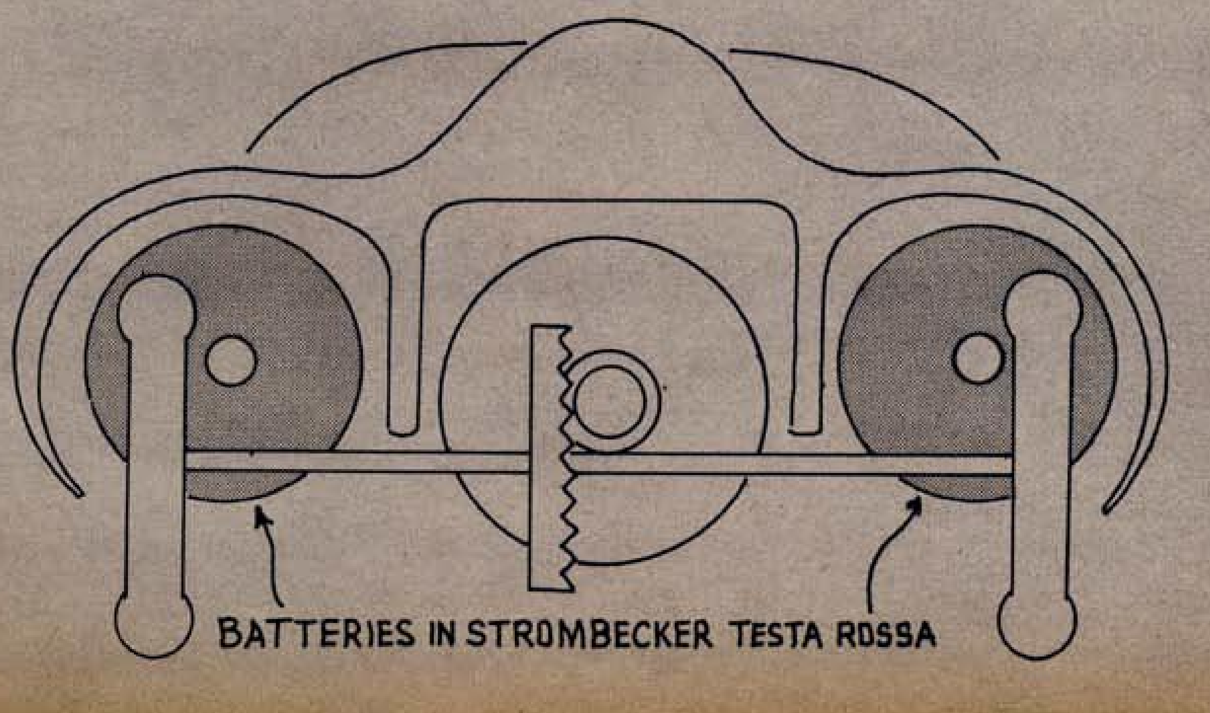
The switch is made of a plastic tube (a plastic eye dropper is ideal) and two small screws or stainless wires mounted inside the tube to serve as contacts. Do not use copper as it will amalgamate. Heads of the screws should be inside the tube, while on the outside, two short wires are fastened with the lockscrews. A small amount of mercury is sealed inside the tube with epoxy after you have found the proper amount through trial and error.

Fasten a small (penlight) 1.5 volt battery to the body. (You can also fasten the battery to the chassis but when the body is removed wires will be connecting the chassis to the body.) Cement 1.5 volt penlight bulbs in place to serve as stoplights. You can also use grain-of-wheat bulbs but make sure they are not rated more than 3 volts. Each bulb has to be wired to the battery in parallel. In Strombecker cars, a battery can be wired under each side. Mount the mercury switch so that the "contacts" face the front of the car.

When the car starts up, mercury rushes to the back of the tube by inertia. When it slows down, mercury rushes to the front — establishing contact between the screw heads. Stop lights will now go on in a realistic fashion. When the car is at rest, mercury does not reach the contacts.

Added weight of the battery or batteries when properly positioned will serve as body weight. In sports or GT cars the stoplight coming on at each corner makes for a very realistic effect.





GEARS

At last . . .

George C. Siposs

If you are a typical slot racer, you have examined every kind of mechanical aid that might possibly improve the performance of your car; better road holding, better motors, tires, and pickups. But, did you ever think of doing something "way-out" with your gearing? In this article you will learn something that has never been tried, on a large scale, that is, on slot cars. The principles are quite old; however, the application of these principles is novel and should improve your lap times.

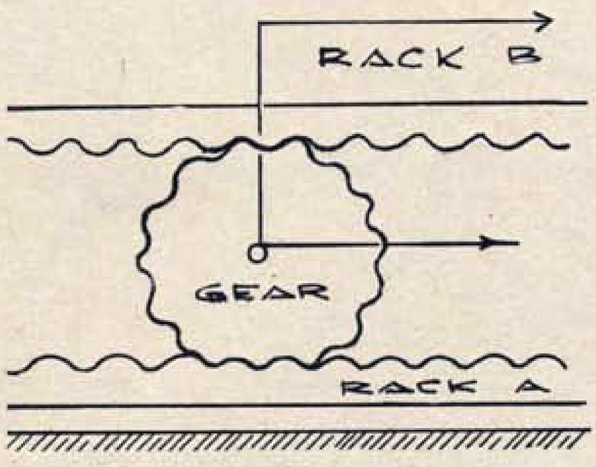
First of all, let's get acquainted with the principle of "differential gearing," upon which the systems described here are based. Let's consider a wheel rolling along on a flat surface. At any particular moment, the point on its rim touching the surface can be considered to be stationary. This point is really a fulcrum or pivot, around which the wheel rotates at that moment. The hub of the wheel is moving forward at a certain speed while the top of the wheel is momentarily moving at twice the speed of the hub. To picture this phenomenon more clearly, let's think of a gear moving along a "rack," that is a toothed surface. Thus, there is no slippage. Then, put another rack on the other side of the gear as well. Now if one rack is kept stationary and the *gear is moved* along on it, the other rack will be seen to be moving at *twice* the speed of the gear. This is shown on Figure 1. (The arrows represent the magnitudes of the speeds.)

Now, let us imagine that the racks are bent into a hoop so that they look like the cup gear, which we use in slot car rear ends. Suppose that each "gear" thus formed is fastened to a wheel and the rear axle is split so that the two rear wheels can rotate independently. Then mount the small gear onto a rotating frame and drive it by the car's motor in the conventional manner. What will happen now? As the car proceeds down the straight, there is equal resistance on both wheels and they will be driven at *equal* speeds by the pinion. When the car enters a curve, however, one wheel has to cover a longer distance and thus has to rotate faster. In a 10-inch radius (180 degree turn), the outside wheel covers several inches of road more than the inside wheel. If one wheel is held back, due to the difference of distances to be covered, the small gear will start rotating on it and thus the outside wheel will be driven faster. (Refer to Figure 2.) This is the action of the "differential" used in every full size automobile. A schematic representation of this action is shown in Figure 3. (In this view, we show *two* small gears driving the shaft-mounted gears to equalize the load.) Theoretically, one small gear would be enough. (The small gear is called "planet" because it circulates around the other gears like planets around stars.) The "frame" is usually called the "carrier." The carrier is rigidly fastened onto a larger cup gear. It is important to understand that the carrier and its gear are freely rotating on one of the shafts and the carrier is driven in the conventional manner by the motor. Now, if one wheel is held back or completely stopped, the carrier and the two little gears keep on rotating and, in turn, drive the other wheel correspondingly faster in accordance with the theory explained in Figure 1. Shafts have to be supported in long bushings to prevent looseness.

Why is this system so useful? Since the outside wheel "wants" to rotate faster when the car is in a turn, and since the common slot car has a solid rear axle, one of the wheels will *always* break loose. Thus, in a corner you are propelling the car by one wheel only. When a differential is employed, both rear wheels are carrying their share and less skidding will be evident. A description of how to make such a differential will be found at the end of this article in figures 6 and 7.

"Vari-Power" Transmissions

The principle of the differentially driven gears can be applied in another manner to increase performance. As we know, a really "fast" rear end ratio, say 2:1, is always hard to accelerate off the starting line because of the tremendous





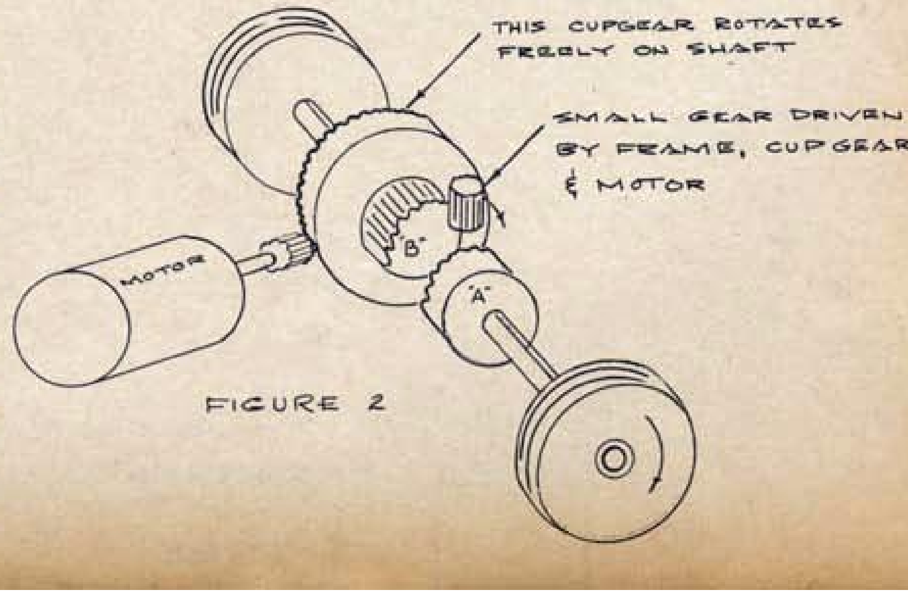


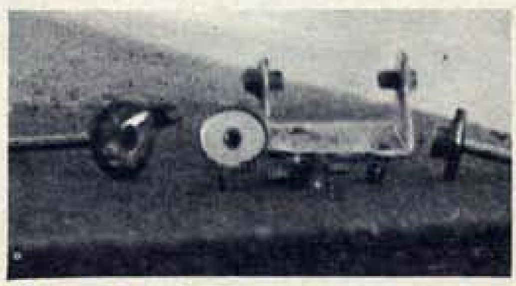
FIGURE 2

IN REVOLUTION

. . differential action for slot cars







Photos at left show completed chassis with differential from front and rear. Relatively complicated mechanism can be reduced into a compact area. Components above are basic pieces of the proposed differential.

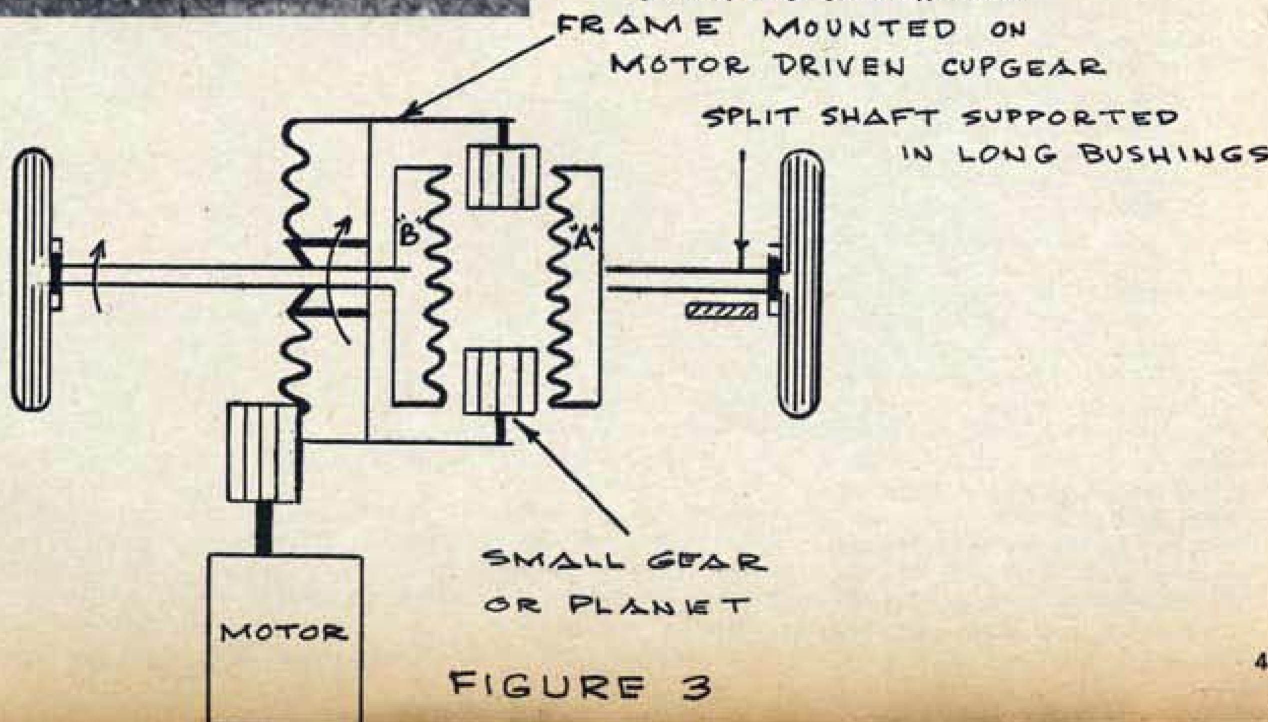


FIGURE 3

GEARS

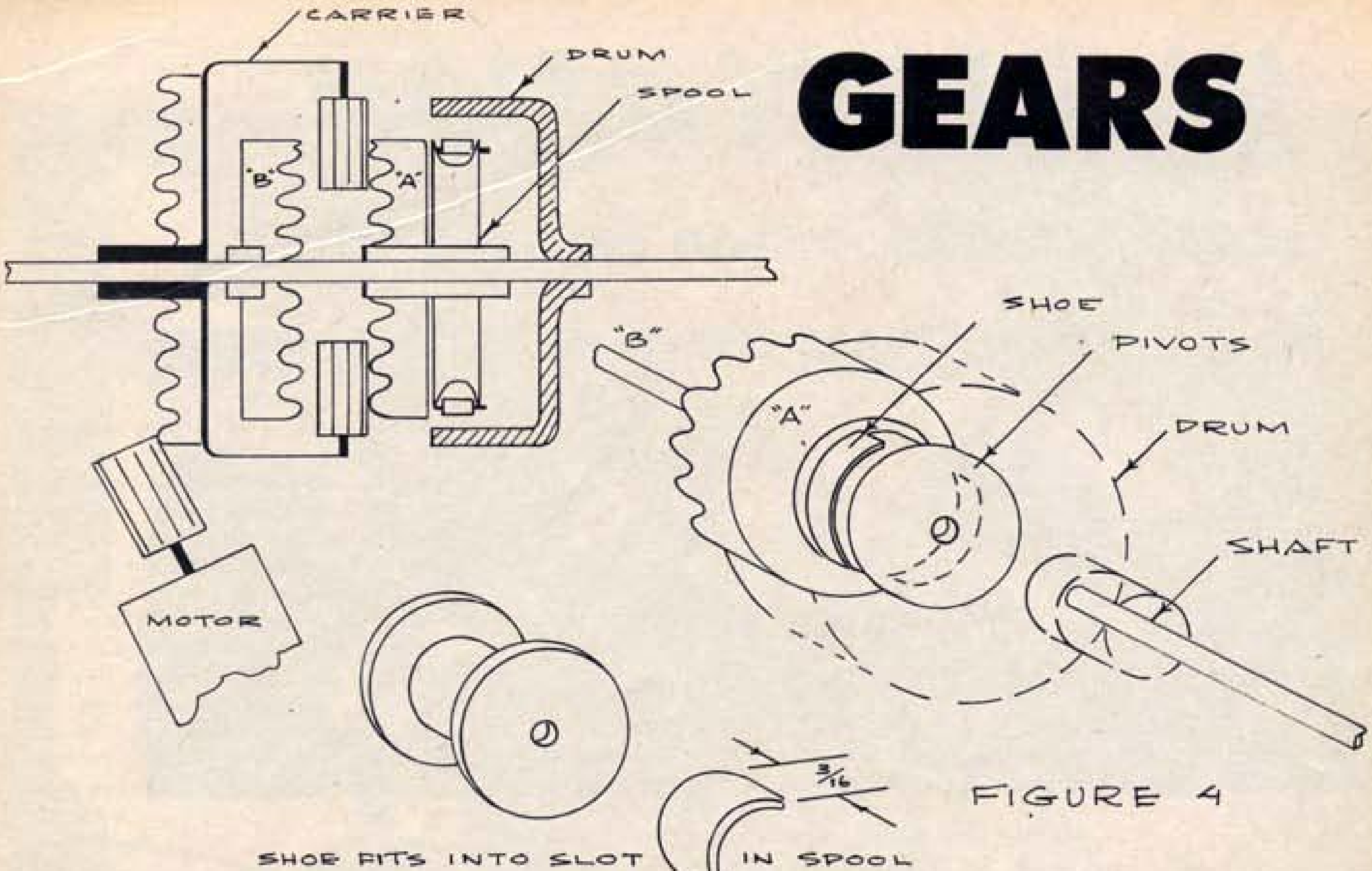
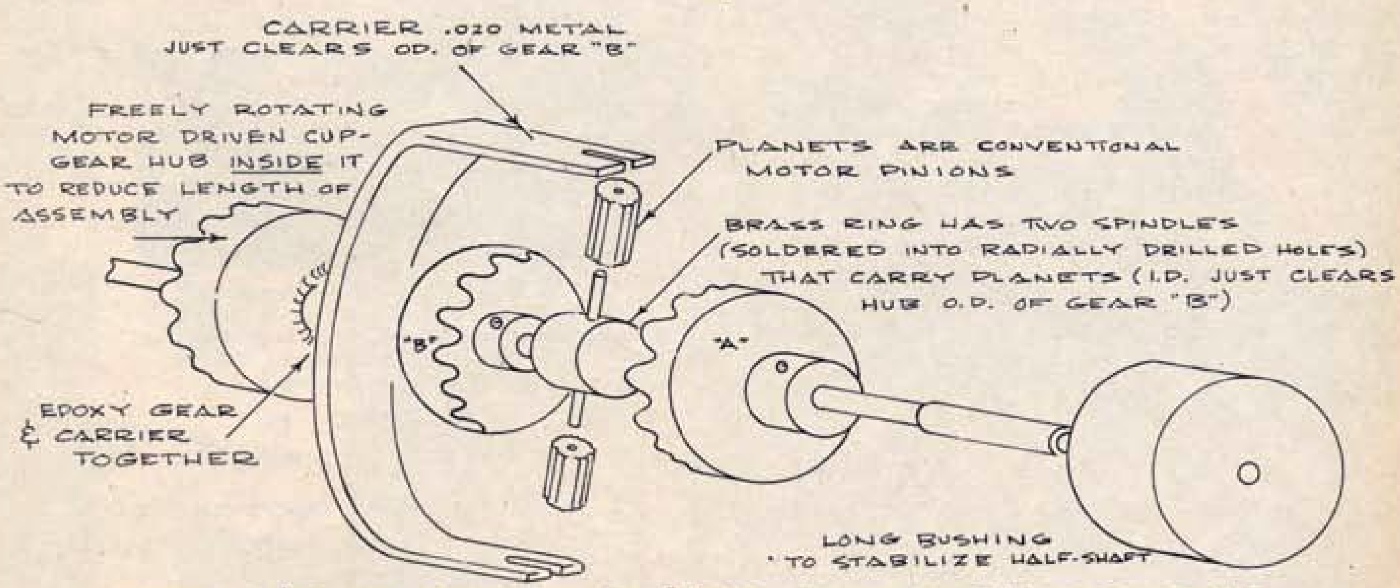


FIGURE 4



GEARS A & B ARE SAME SIZE BUT "B" HAS INSIDE HUB, "A" HAS OUTSIDE HUB

FIGURE 6, DIFFERENTIAL

torque required. If the motor is allowed to turn faster at the start and the high gear comes in only as the car reaches high speeds, better and smoother acceleration will result. Using the same basic components as described above, we can achieve this. (Follow diagram 4.) Use a conventional *solid axle* for both rear wheels; fasten Gear "B" to the shaft; the carrier and planets are freely rotating. Gear "A" has a spool shaped metal part fastened to it and it rotates freely on the shaft. The "spool" has two "shoes" in it. They are actually curved metal pieces hinged by fine music wire so they can pivot in the groove of the spool. Then glue a small piece of cork to each of the shoes. A "drum," actually a cylinder, is fastened rigidly to the shaft. The shoes of the spool can expand and bear against the inner surface of the drum, due to centrifugal force. The driving motor is slightly tilted so that the center of gravity is restored, since the off center position of the frame and drive gear require the motor to be slightly to one side.

Let's see what happens when the car starts up. The motor rotates the planets but they do not move gear "B" since gear "A" spins freely; thus, the planets have nothing to bear against and so cannot perform "useful work." Gear "A" spins faster and faster until the shoes fly out, due to centrifugal force, and press against the "drum." The "drum" will be dragged along with the shoes so that planet gears eventually get more and more resistance to drive gear "B." The car starts rolling and the shoes bear harder and harder against the "drum" until the whole system is locked together and the car is

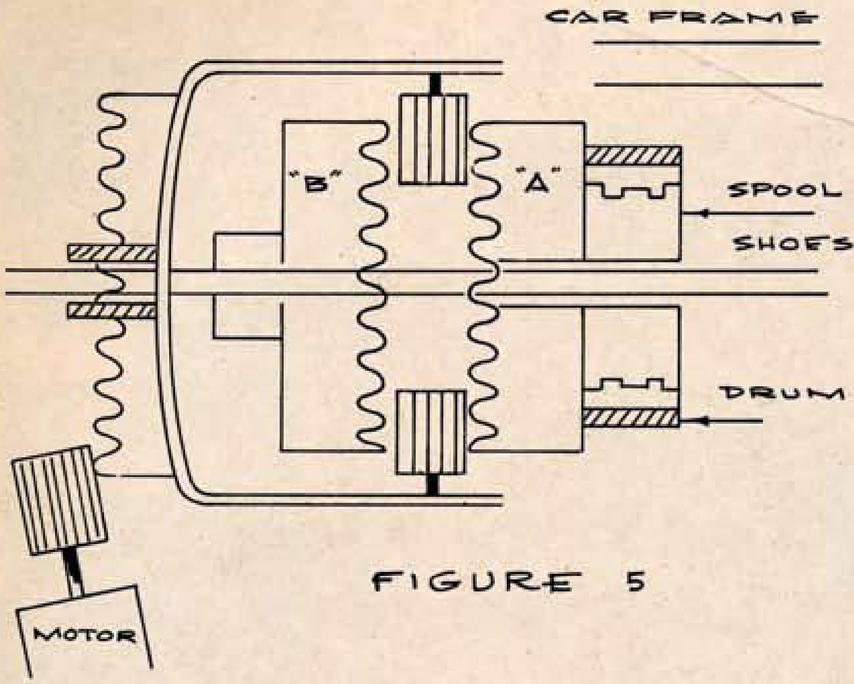


FIGURE 5

driven by the motor and cup gear, as if the gear system were not present. Of course, the whole thing happens in a few revolutions since the shoes fly out almost instantaneously. The net result is a very smooth start. (The size of the "drum" determines how soon the shoes touch it. If the "drum" is much larger than the spool and shoes, it will take many revolutions of the motor to get the car moving. If there is little clearance, the car will start moving almost instantaneously.) Hence the name "Vari-Power." Of course no differential effect will be evident. You have to experiment to find the correct size "drum."

An *ovedrive* effect can be achieved using the same basic components with one exception; the drum is fastened to the frame of the car. (Figure 5.) In this case, an exceptionally fast rear end ratio will be achieved while retaining the same smooth starting characteristic. What happens is this; at the start, the planets start revolving as we have seen before. The shoes expand due to centrifugal force and cork brake pads drag on the "drum." Thus, the gear "A" is slowed down more and more, and since the carrier and planets still move at the driven speed, the gear "B" will rotate at almost twice the speed of the motor driven cup gear as explained in Figure 1. The net effect is a fantastically high speed and smooth acceleration. Due to the inevitable slight slippage, the acceleration is slightly slower. Thus, power has to be applied sooner in the turn, but on a course having very long straights, the top speed will be fantastic. There is no wheel spin.

Carrying this idea further, we could lock gear "A" to the car frame solidly. In this case, the high gear effect would be evident from the start: sluggish acceleration, fantastic top speed. This is only suitable for a banked-turn speed oval type of race track, and saves the motor by letting it run slower and cooler.

Most components in these gearing systems can be bought in hobby stores. The gears and pinions are conventional (though bevel gears work better and are well worth the slightly higher cost) and the carrier has to be made by hand. The basic differentiel kit including gears, pinions, shaft, carrier, etc., but without brake and drum can be purchased at Gilbert's Hobby Store, 22238 Palos Verdes Blvd., Torrance, Calif. for approximately $5.95. Plans & drawing alone sell for $1.49. Since there are many rotating components in a differential system, utmost care must be taken to align the parts and eliminate friction to prevent power losses, which would upset the advantages gained.

To summarize, this basic gearing system is adaptable as:

1. Differential (rear wheels are driven independently).
2. Vari-Power Stage I. Infinite ratio at start, (ultra-low gear), regular gear ratio at top speed.
3. "Vari-Power" Stage II. Ultra low gear at start, almost half of regular ratio (i. e. overdrive) at top speed.
4. Full overdrive (ultra high ratio).

For something really revolutionary, try "Gears in Revolution."

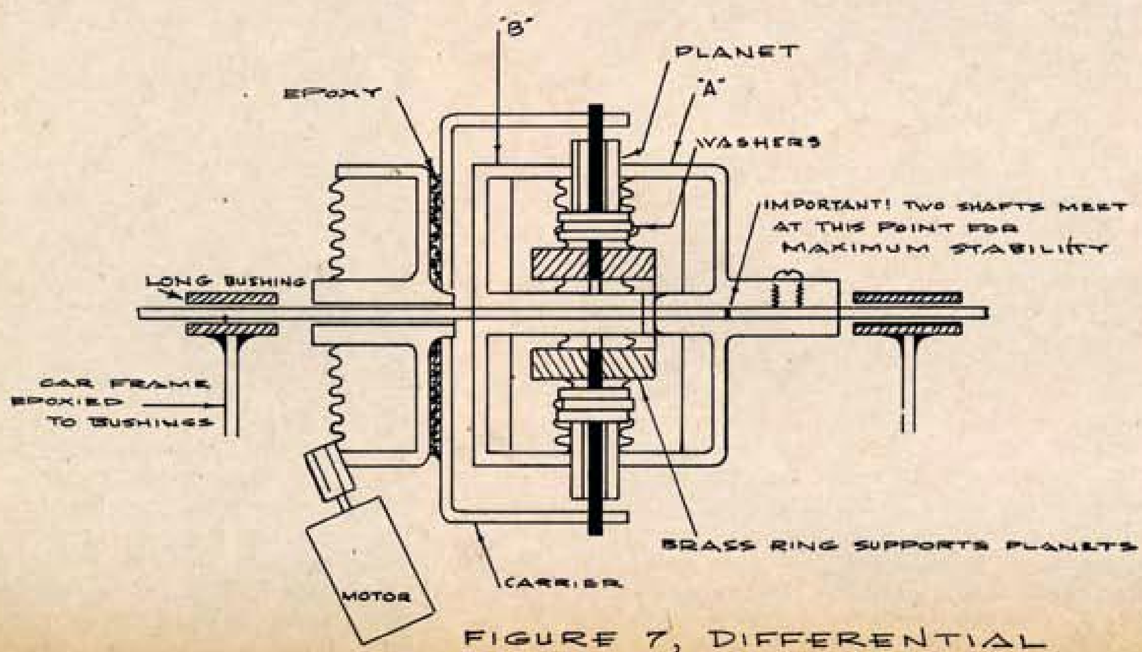
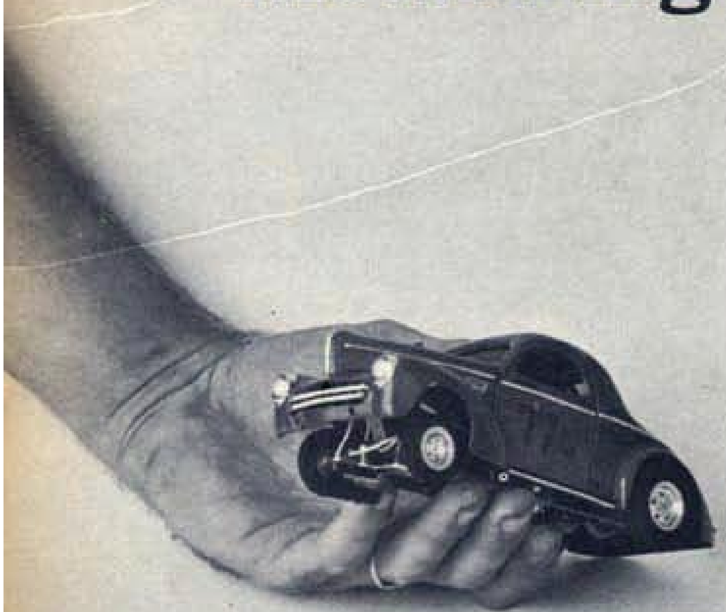
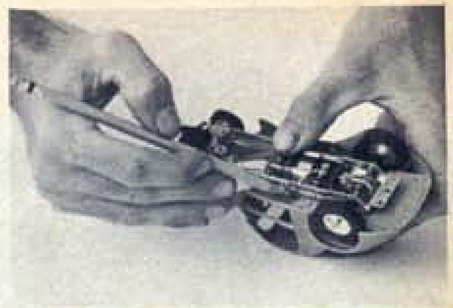


FIGURE 7, DIFFERENTIAL

Motorizing the



'41 WILLYS



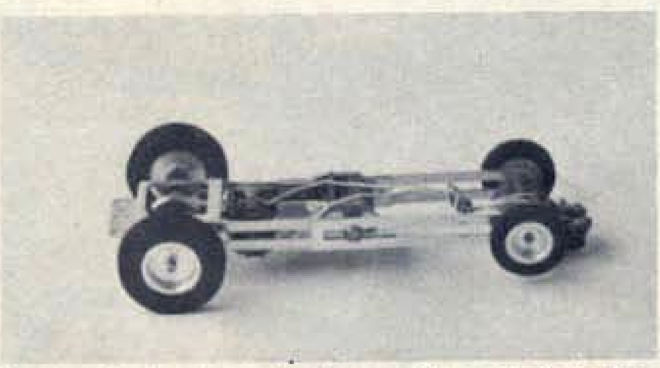
After floorboard is secure, position the chassis and mark the outline with a pencil. Be sure tires line up with the fender openings.



In cutting out the marked section, make it a little smaller to get a good fit.

by Bob Paeth

Since the '41 Willys coupe has become one of the most popular cars on drag strips across the country, Revell's model of this rod is a natural for the slot racing track or strip. The body is roomy and allows for installation of any of the slot racing motors available. The motor chosen for this project is the Revell-Pittman RP-77. Actually, this car was built using Revell parts exclusively (frame, wheels, tires, motor & body). Paint used is Testor's orange with several coats of candy red on top. Windows were tinted with the same candy red. With very little effort and this "how-to" as a guide, you too can come up with a trophy-taking "bomb."



Chassis, wheels, tires and motor used here are from the Revell Model Car Racing program. Chassis is made for 1/32 scale cars but fits the Willys perfectly.



Install floorboard by either melting it in place with an electric pencil or use plastic cement. If cement is used be sure it is completely dry before proceeding.



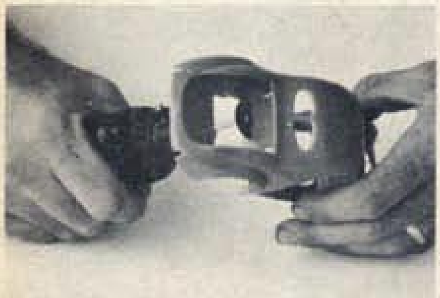
With the chassis held in place, use a pencil, mark spot for rear mounting holes. The two outside holes will be enough in to hold the rear.



For the front chassis mount, take a piece of aluminum or brass about ¼" wide and 1/16" thick. Bend this into a "stair step" shape. Mark and drill holes the same as you did for the rear.



Anchor rear wall of trunk in place and mark a section of about ¼" along bottom for the width of the frame.



Using either the Dremel Moto-Tool or X-Acto Saw, cut out marked section and check for chassis clearance.



Since a slot racer does not require opening doors, file off hinges on doors.



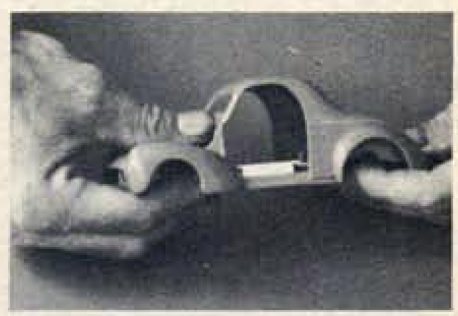
Using the electric pencil and scrap plastic, carefully mold in holes left from filing of the hinges.



Tires selected were a little large for rear fender openings so fenders must be radiused. Take a little off at a time so you don't make openings large.



Since floorboard was cut to fit chassis, a new floorboard must be made so a seat may be installed.



Here the new floorboard is raised to give clearance for the chassis.



To make the blown Olds engine fit the Willys, front of the block must be cut off. Engine will then clear front mounting brace.

In this finished view, "power dump" is clearly seen. Length of front mount will determine the "dump." The stock Willys frame was left out so engine had to be cemented to the firewall.



HERE IS A SIMPLE NEW WAY TO BUILD MODELS IN TRUE PROPORTION

make'em to SCALE

By Bill Sippel

Our mail reveals to us that many readers — not only of MCS but of other lesser publications as well — have difficulty in drawing cars to scale. Quite often they have photos of the car they wish to reduce to slot racing size, but for some reason transferring measurements from the photo onto paper escapes them. Others tell us the actual drawing isn't hard, but it is necessary to have a drawer full of fairly expensive artist's equipment to do it.

Without buying an expensive pair of proportional dividers it is possible to accurately scale a car within close enough tolerance to pass even the most eagle-eyed perfectionist. For about 50¢ you can buy an inexpensive ruler and a compass, plus a pencil, some scratch paper and a small pad of tracing paper.

You can even design your own car on paper, then scale it to your favorite slot racing size very accurately. Or you may want to work from magazine or newspaper photographs of real cars and, again, reduce it to the scale you want.

It is best, of course, to have a side view of the car, a top view, and front and rear views. But in this discussion we will work from a side view only. Draw a line (A as shown in the drawing on the opposite page) through the center of the wheels. Next, determine the centerpoint of that line midway between the centers of the wheels, and draw a long perpendicular line (identified as B in the drawing opposite). Now draw lines (C) from each wheel center to the bottom of the perpendicular line so that they intersect. You now have a triangle whose sides are A, B and C. In our case the car sketched at top is the original and we will be scaling our model *down*. If you wish to make your scale model *larger* than the original, extend the lines upward as you will be working *above* the original.

Now you are ready to draw your car to the desired scale. In our example, to show you how it's done, we will imagine our prototype car has a wheelbase of 90 inches. Lay the ruler parallel to the line A which designates the wheelbase of the original (top) photo (or drawing). Now simply move the ruler straight down until you reach the scale wheelbase desired. As examples, a 90-inch wheelbase works out to 3¾" for 1/24th scale, 2-13/16ths for 132nd scale, 1⅞ for 1/48th scale and 1-5/32nds for HO scale. When you reach the proper wheelbase measurement draw a horizontal line.

Now take any major point on the car and draw a line from that point so it intersects at the point of the Vee, or the lower tip of our triangle. Examples would be from the tips of the nose or tail, the outer edges of the wheels, the front or rear edges of the windshield or cockpit, and so forth.

Quite often by the time you have reached this stage you can readily see that the car you have in mind will not work out. In other words, perhaps you have a particular motor in mind thus you can see by now that that motor simply won't fit as the car is too small.

Using our side view example, draw in the tires at the wheelbase Vee line intersections. These can even be drawn freehand, or use a compass. Now roughly sketch the rest of the car in using the major point lines for reference. In this case the car's height will be pretty much of a guesstimation, however you are sure to be *reasonably* close.

For absolute accuracy, and if you want to take the time to do it, both a "bottom" Vee (as described) and a side Vee can be drawn. Then with all the major pick up lines drawn in you can use an overlay of tracing or rice paper. Place the tracing paper over the wheelbase line and draw in the wheels and tires. Then moving back and forth over each set of wheels you can find the intersecting points on all the major pick up lines. Once these are X'ed in you can draw the complete unit with total accuracy.

A draftsman would use his very expensive proportional dividers for his drawings, but once the novice has the hang of the quickie-transfer method described here, he can rough out a drawing within minutes.

Points you need to know about the car you are going to scale:

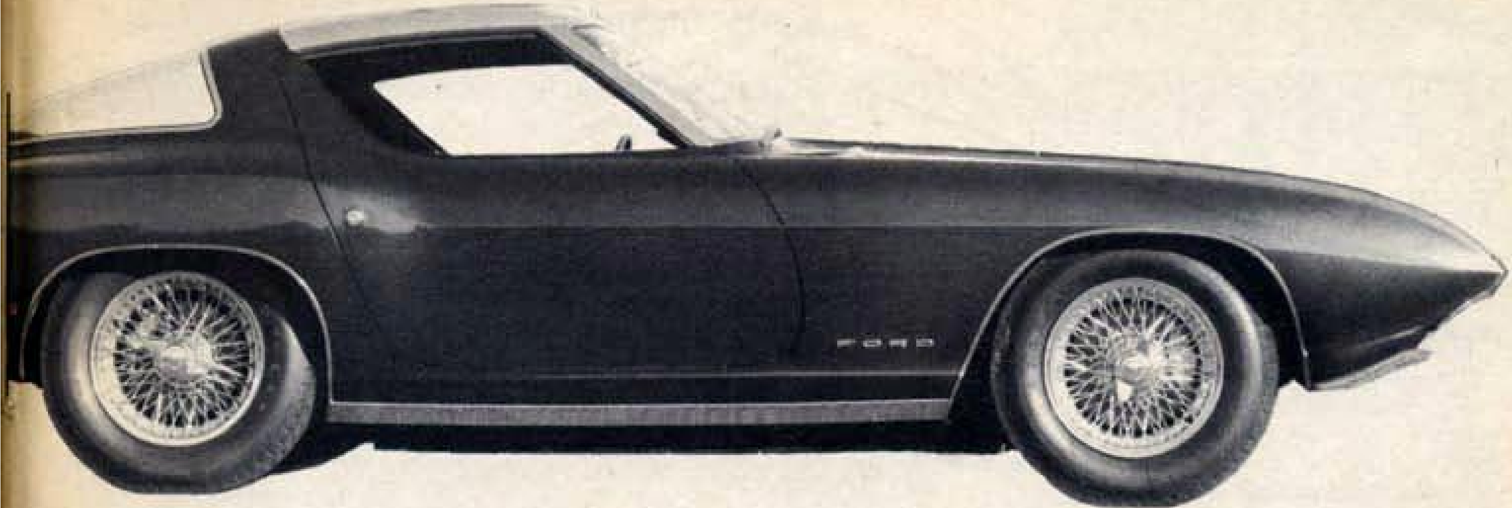
- Sideview — Tire dia. or body height
- Sideview — Wheelbase
- Top View — Wheelbase
- Top View — Body or wheel track width
- Front or rear view — body or track width
- Front or rear view — body height or tire dia.

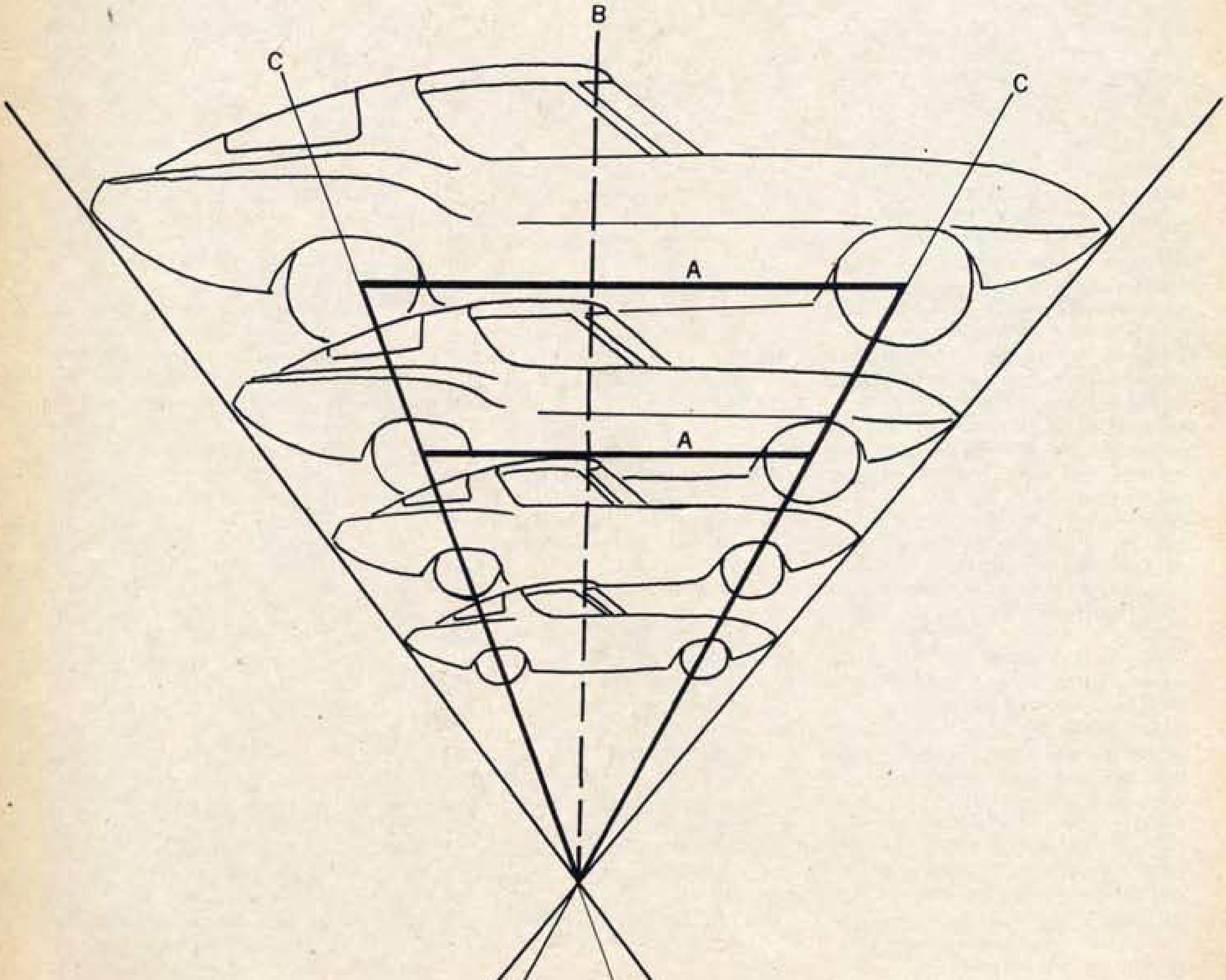
KEEP IT IN SCALE WITH THIS EXCLUSIVE MCS CHART

1/24th	1/32nd	1/48th	1/87th
1"—24"	1"—32"	1"—48"	1"—87"
1/2—12	1/2—16	1/2—24	1/2—43-1/2
1/4—6	1/4—8	1/4—12	1/4—21-3/4
1/8—3	1/8—4	1/8—6	1/8—10-7/8
1/16—1-1/2	1/16—2	1/16—3	1/16—5-7/16
1/32—3/4	1/32—1	132—1-1/2	1/32—2-23/32

1/32nd: 0 8 16 24 32 40 48 56 64 72 80 88 96 104 112 120 128 136 144 152 160

1/24th: 0 6 12 18 24 30 36 42 48 54 60 66 72 78 84 90 96 102 108 114 120


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THE TECHNIQUES OF DRIVING

Here's how the hottest thumb-jockeys manage to wind up in victory lane.

By Bill Sippel

The subject of driving slot cars on a road course is one that could be argued endlessly. There are hot handlers whose driving techniques are as different as night and day, yet when racing together one will win fifty percent of the time, and the other will be first the other half of the time. So at the outset, let me state that there really is no *right* way to drive, but there is a *wrong* way! In going over the points below keep this in mind: Basically we will tell you how *not* to drive.

But there are certain basic driving factors that are common to those who make the winners' circle with regularity.

1. Formula for success — go as fast as you can without deslotting. The best way to do this is to pick your shutoff points, through practice, which will bring your car into the turns at maximum speed. Practice will also show you the fastest way to get through each individual turn.

2. Pick the proper place to pass. By passing in the straights you can get by your competition cleanly and be first into the next turn. Watch that the place you pick to pass will not find you caught in the turn *if* the other car has the inside lane next to you. If you prefer passing in a turn, make sure *your* car is on the inside lane. Be careful not to go through the curve too fast and have the rear end of your car swing wide. It's open to nerfing by the competition which might put you out of the running real fast.

3. You, as a driver, are better off to yield at points on the track where a competitor's car can deslot your own. Even though you might be a trifle behind, you can probably still catch him from this position and at least you are safe from a nerf yourself.

4. Many people consider nerfing a bad word, but it's allowed in big car racing so on scale slot courses it will also probably escape the marshall's eye. If the only way to beat your competition is through nerfing, be sure to hit him solidly with the side of your car and only when you are inside him. It's not a recommended part of racing and it is an admitted gamble. Nerfers quickly get a reputation and it isn't a good one.

5. Try to outdrive your competitor by leading him too deeply into the turns. Do this by making him think he can pull the lead from you. When he follows you into a curve too far, he'll spin or deslot — both of which will put you firmly ahead. If your competition is a pro driver, this bit won't work.

6. Don't be suckered into anything yourself. During the duel to lead, a driver frequently gets carried away when he thinks he's soon to take the lead — only to find he's gone beyond the maximum shut-off point. Or, that on the turn coming up he's on the dangerous outside lane.

7. Learn to lead your car; that is, look *ahead* of your car's position to avoid getting into an unfortunate circumstance. This takes a lot of practice, but is one of the common denominators of pro driving. Never take your eyes off your car, or off the track just ahead of your car. Make yourself believe that during a race you're really only running alone as in practice. I've heard drivers talking to each other during a race. This is bad, because it takes one's concentration off his driving. However, talking can be used to advantage from a psychological standpoint. Ask your competitor a question while your cars are on the straights. Time your question so he'll have to answer you during the time his car is in the next turn. Don't listen to the answer yourself, however. Keep your mind on your driving.

8. There are handlers who drive with simple on/off buttons rather than the rheostat controllers. To be smooth they must operate the switch like a machine gun. Some rheostat enthusiasts use their speed controllers like an on/off button. Full on or full off, no in between. Still others use rheostats but work them throughout the available speed range. These last drivers are always the smoothest of all. The smooth driver doesn't look like he's going too fast in practice, but he always seems to be first across the line during a race. Much of this is due to his car's gear noises and lack of spectacular bursts of acceleration out of a turn. Try developing a smooth style of driving, rather than an erratic one, and see if you don't end up in victory lane frequently.

There are other factors than use of the speed controller that go along with the way a person drives. Some drivers gear their cars low, others gear them high. The 4 - 1 car is more responsive out of a turn and occasionally the throttle must be feathered. The 3 - 1 car will not accelerate as rapidly but will possess a higher top speed. Gear your car in accordance to your favorite driving style. Some drivers, regardless of their gearing ratio, set their rear end gears up tight to assist during deceleration on approaching a turn.

Many drivers enter a given curve all the way off their throttle. They will coast part way through the turn, then hit the throttle to have as rapid an exit as possible. Other handlers will ease up to the turn, then power hard all the way around trying to hold the tail of their car toward the inside.

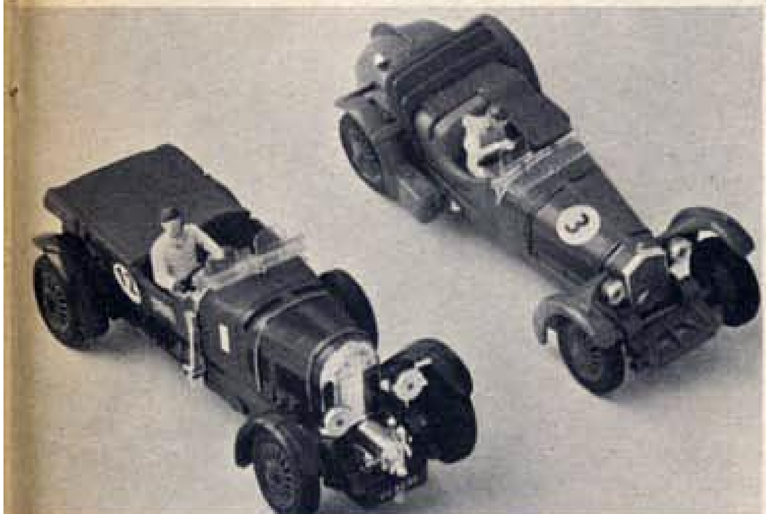
Always bear the fact in mind that there are things you can do with slot cars that can't be done with the real ones. Since a slot car is guided by virtue of a shoe up front, there are always turns and even switchbacks that can be taken with the tailend dragging through the *inside* of the bend rather than the outside. That's known as understeer, as opposed to over-steer. If this trick can be accomplished you'll find yourself going faster through the turns than ever before. This situation can be created since the guide follows the slot but the rearend powers straight through since it need not follow the slot. If you go through the same turn slower, in many cases you will find yourself in trouble.

Never forget that what may be good for one particular car will not necessarily be good for the other. One car may require entirely different methods of handling than another.

A major point of certain defeat is to become discouraged. If you are a beginner and are having handling troubles, have one of your neighborhood pros try their hand at the car. He can undoubtedly suggest changes to the car or in your driving technique that will result in your car running like the proverbial bomb. At the very least you will have gained valuable knowledge — whether the trouble with your car is in its construction or in your handling.

Personally, I've never finished worse than fourth in a race — and I've never raced on a track with more than four lanes! From my experience, I can tell you one thing about winning a race that never fails. Grab the lead at the very start of the race and stay there!

vintage racers from BRITAIN



Scalextric of England are justifiably proud of these new vintage cars: a '29 Bentley and a '33 Alfa Romeo.

Vintage car lovers have a new treat waiting for them in the form of two new slot cars from Scalextric. Wearing a $14.95 each price tag, the only thing a racing buff needs to be handy with is a check book. Some of the best British craftsmanship has gone into the production of a 1933 Alfa Romeo and a 1929 Bentley, both in 1/30th scale.

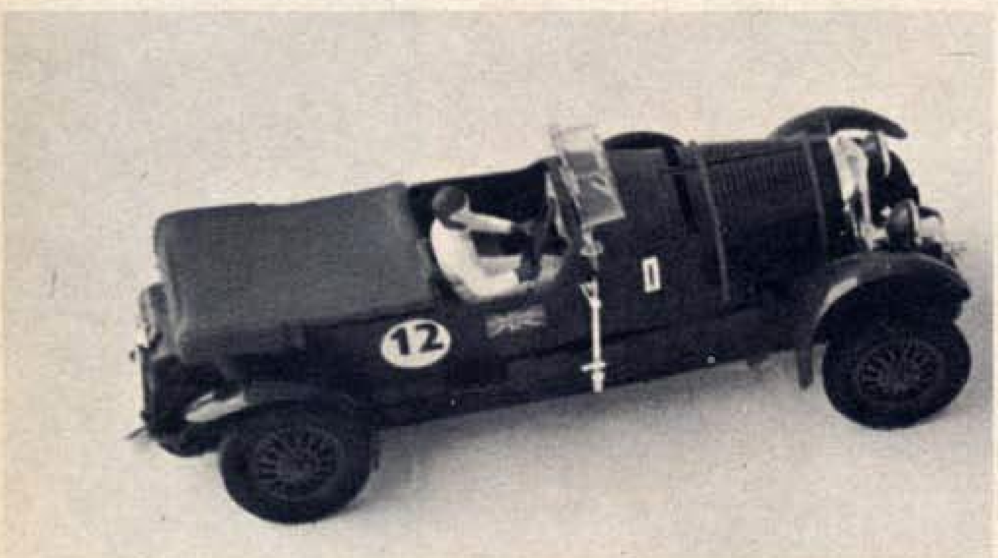
Under the well-detailed exteriors of these two cars is a reliable Triang 3-pole, 12 volt motor.

From a size standpoint, the bodies contain sufficient room to handle much larger motors than the Triang. A guide shoe up front, rather than a simple pin, would help speed considerably, especially with the front wheels rolling on the track surface rather than with the present float method which we refer to as sledding.

Both cars have a lengthy wheelbase, or rather an extreme distance between guide pin and rear wheels, making them virtually spin-proof when driven properly.

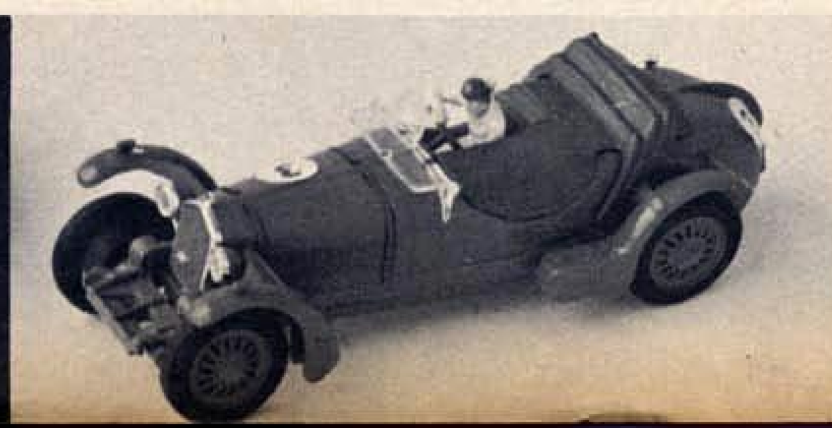
Before Christmas arrives, Scalextric also expects to offer an Auto Union and a Bugatti — both in 1/30th scale. In 1/32nd scale a Ferrari Berlinetta and Aston Martin coupes will be available.





A CLOSE LOOK AT THE MINUTE DETAILING AND CARE USED IN ASSEMBLY BRINGS THE 14.95 PRICE WELL WITHIN REASON.





Report from England:

BROOKLANDS GRAND PRIX 1963

MCS' United Kingdom Correspondent Tells The Story Of A Major Event In The Home Of Slot Racing



A.M.L. KENNAUGH

One of the advantages we in England have over our Friends in the U.S. is the comparatively short distances we have to travel to race meetings organized by other clubs, and it was recently my pleasure to visit West Byfleet, on the outskirts of London on the occasion of the Third Open Grand Prix organized by the Brooklands Model Car Club. This is a club established for some four or five years, and has previously been known as West Byfleet, but the name is now changed to Brooklands as the site is near the old Brooklands Car Race track, and enthusiasts will remember the Famous Byfleet banking on the side of the course nearest the present model club.

The club is very well known as progressive in their developments, and has some renowned drivers including John Ramsdale, who was winner of the Pittman Trophy at this years Ecurie Spa meeting. Possibly the most noteworthy innovation of all is the braking system developed originally by Mr. A. Lance, and now brought to production by M.R.R.C. The origins of braking were due to the old track which is shown superimposed on the diagram of the current track. This was locally known as the Byfleet dragstrip, and the cars built by the club, while not outstanding on fast bends, featured very high acceleration and top speed, and brakes became a must to negotiate the slow bends. The new track still produces very rapid cars and those developed for tracks where fast stable cornering are necessary for good lap times are usually outpaced by the home clubs products. To help even this advantage the wicked 180 degree bend at the end of the straight had been greased and was certainly a trap for the unwary or those with a late touch on braking. The meeting was very well attended, and I found many familiar faces there.

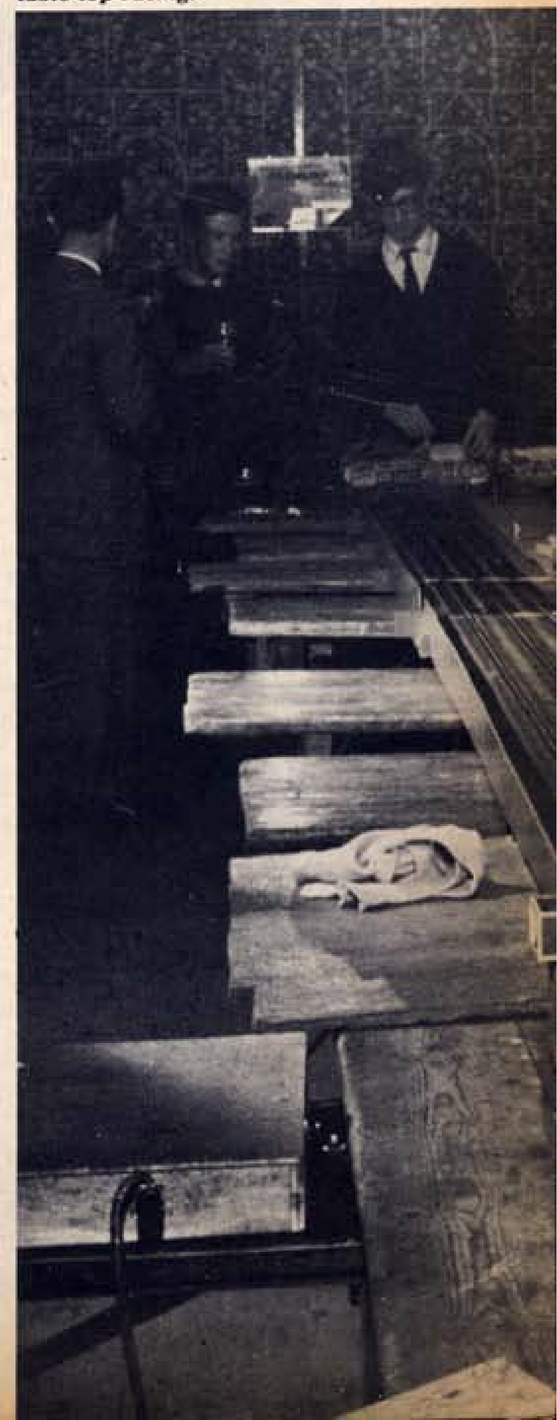
Practice was available on the Saturday for those who could be there, and early Sunday for the others. The meeting was the first held under the new ECRA Slot Rules, which are expected to be fully ratified very shortly, and with entry approaching the 100 mark in both Sports Car and G.P. the programmed times had to be maintained.

Brooklands track is typical in many respects with other British circuits. The Clubroom is part of a large social club premises, and as the club can only use it on prearranged club nights or occasions, the circuit is fully portable. The surface follows the well tried hardboard top with S.R.M. copper tape contact, and has auto lap counters and start system. The club had devoted much care to the track erection for the meeting and the joins of the sections were better than many fixed tracks and unnoticeable.

At 11 a.m. on the dot the first heat was under way. A description of one race is very like that of another, and in common with many fans, I find enormous interest in talking to old friends and new, and finding out the ideas of others to see if I can find any useful tips. What is found can often show new trends, and I think some of this will be of more interest to you than the racing.

Of major interest was a preview of things to come on the market. Alban Adams of MRRC and Co. were there in force and I managed to have a good look at the prototypes of their latest. First were samples of a new range of MRRC bodies, vacuum formed in plastic, and the two I particularly noticed were the Sting Ray G.T. and Mercedes 154. If the bodies were interesting the works were more so. Under the lid was the prototype of the new MRRC motor. This is a slim 3 pole designed for high speeds at low current consumption. The motor incorporates ball races for the bearings and axles, and the wheelbase can be adapted to six different lengths. The motor shaft runs right through the motor so it can be used for a four wheel drive, and an ingenious driven steering unit was fitted. A new and improved type of steering is in the offing, and as MRRC are expanding rapidly.

Happy winners relax at the end of the big British slot event. The Brooklands track, below, is an excellent example of the advanced portable layouts in the home of table top racing.



A keen eye on the heats brought some other interesting ideas to notice. Brooklands track being almost entirely flat does not call for prowess in climbing hills, and this has led to developments which have not been tried to any great extent in my own club. An unusual sports car on the grid attracted my eye, and when it shot down the straight like a rocket I was anxious to get a close look. The model was of a wooden bodied rear engine sports car designed (full size) for Mechanics Illustrated and was an eye catcher as well as a fast number. The model was by Mr. A. Lance, who designed the original braking system and featured 4 wheel drive from two Microperm motors and the latest development in brakes. Acceleration was fantastic and the brakes operated smoothly and fast to slow the car enough for the tricky bends. Mr. Lance was not on his best driving form so though an easy heat winner did not show as well as he should on the results.

Runnymede club is always good for some interesting cars and their standard of modelling puts them in close contention for Concours events, and they are no slouches on the track. Mike Pannett came up this time with the heavy weight to end them all. A Galaxie with home moulded plastic body and a big Tenshodo motor. This is a top performer on his own rather twisty circuit but was not geared to give the best at Brooklands. It is noticeable that the London clubs tend to favor big motors in weighty cars or go to the other extreme and use the K's MkI special in a light car. Either version shows to advantage on the type of track in use there. So far Midlands clubs have not made more than tentative moves to try this formula as

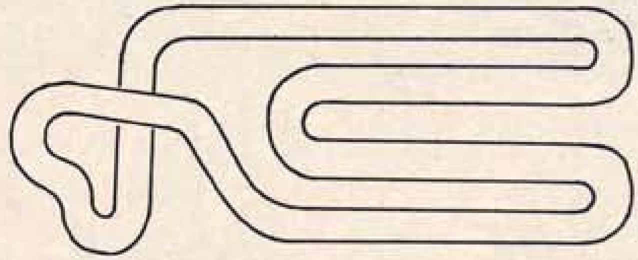
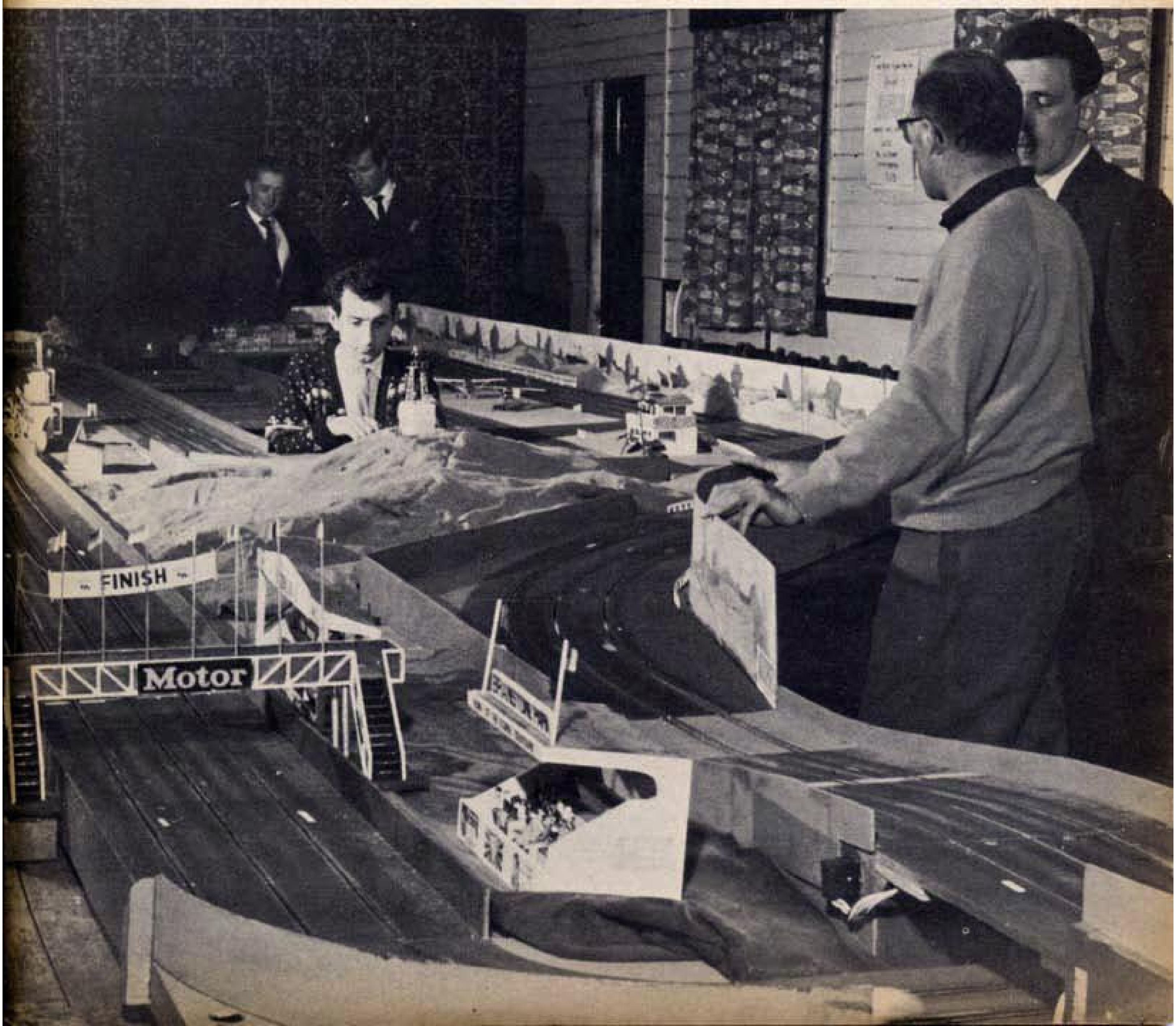


Diagram of the Brooklands circuit (not to scale). Dotted section shows the original circuit before extension. The length is approximately 130 feet.





A Speedball Special and Indianapolis style Novi, scratch-built by A. Lance of Brooklands. Speedball has twin Microperms and is fantastically fast. Both cars have four-wheel drive and braking systems.

Whats new in England

Biggest news this month comes from MRRC, Alban Adams is expanding the works and new products, sometimes rather slow to be available in quantity are coming thick and fast. Just out are the new nylon gears incorporating overrun brakes. A variety of ratios are available and should meet all requirements from 1/24th to 1/32nd Minis. The brakes really work smoothly, and are tops on big tracks with long straights. The very latest in a modified controller with a third connection for electric brakes, and this has been done specially to meet the demand from the boys in the U.S. By the time you read this they will be available. The new MRRC ball bearing motor I have already mentioned in another article. It is hoped that these will be out for Christmas, and the prototype was a real goer. The standard MRRC motor has also been moded with new windings, and the result is fabulous. I estimate an increase of something like 30% in revs and no loss of torque.

Scalextric are keeping up with the advertised program for 1963, and the new Alfa Vintage Sports car is around. Not the prettiest Alfa ever, but a real eyecatcher, and worthy opposite number to the Bentley. The F.J. cars are out, and excellent value at a new low in prices. Steering and sprung rear end too, and fast. The Scalextric range of accessories gets bigger every week, and with these around why bother making them yourself?

Airfix have come along with the Porsche and Lotus. To my super critical view, not quite up to Airfix standard scalewise, but every bit as fast as the stable companions. Their latest kit is the British Ford Zodiac. About equivalent to one of your compacts in size it is a high performance sedan which shows up well in the ralley results, but has not been seen to any extent on the track due to the fantastic performance of the smaller Cortina, available in 'hot' form as modified by Lotus.

Customizing has now hit the U.K. and Revell has put their customizing kits on the market. So far this is a new idea to fans over here, but from the number of plastic kits sold, I think it may catch on. The slot fans have been giving these kits a long hard look, but as we use 1/32nd scale almost exclusively, as yet they have only a limited application for some of the items. Perhaps we will see customised cars with a 'Made in Britian' tag contesting the honors in the pages of Model Car Science.

Final item on this months news front, is that VIP, suffering from doubts and rumors about their continued existence, are now back in full swing under the name of VIP (Raceways) and the excellent products we knew will continue, and we hope be increased. —Mac Kennaugh.

visitors to their tracks with this type of car have not impressed against the 'home' formula. However with a few useful tips in the bag, and Alban Adams producing brakes I am going to give it a real try myself.

Among other notable cars was an Auto Union with a 'Busy' driver who moved with the steering unit and leaned realistically as the steering wheel turned. A superb Porsche G.T. from fellow clubman Dave Pledge which had the lot including windshield wipers and a fast mover at that. Minis were in profusion, and Airfix's latest, the Ford Zodiac made an appearance. This is the latest in their series of Kit models and is well up to standard. Possibly unfamiliar to U.S. fans this is the largest Ford made in the U.K. and is a car similar in size to the U.C. compacts with a 2½ litre engine giving 114 b.p.h. and capable of 100 m.p.h.

Meanwhile the heats were being keenly contested and the track continued to operate as smoothly as the organization was running. Well on schedule the heats ended and the leader board showed the three finalists and the three Sub finalists in each event. The club had followed the tried and proven rule that good advance preparation, adequate coverage for every possible emergency, and a firm schedule rigidly maintained, means a happy meeting for all contestants.

The suspicion that the home club could not be beaten on their own track, strengthened by the knowledge that they were hard to beat anywhere, proved true. The Brooklands boys filled the first six places on heats results in both G.P. and sports. However the ruling was that a sub final in each event was for the highest placed visitors, and the finals for the three top placers. The Sports sub final was first, and top contender was Snewin of Turnpike club with an E. Jag, Smith of Runnymede with a Triumph TR. and Lindley with another E Jag to beat. From the start this was a hot one but Snewin's Jag had troubles and the other two fought it out to the last bend, Lindley coming home by a short head.

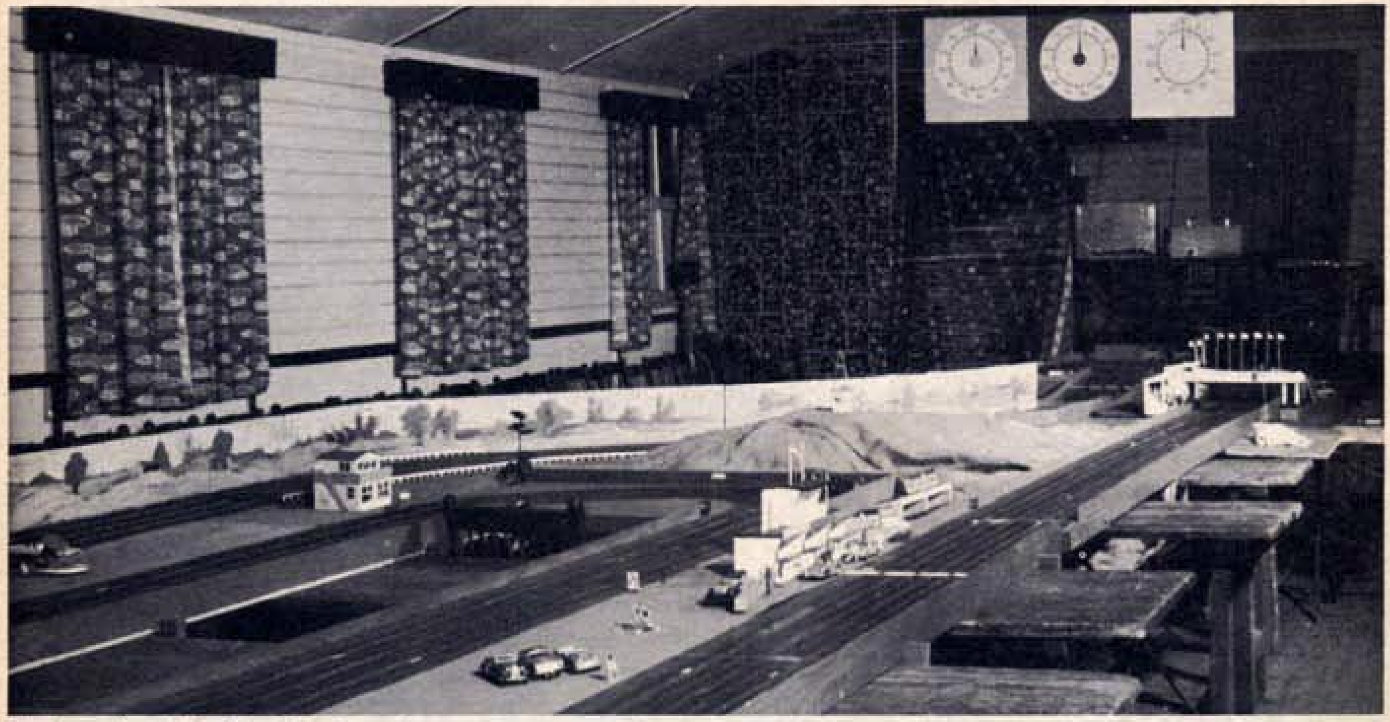
Smith and Snewin were also in the G.P.sub. with Burns of Bournemouth, but this time Snewin made no mistake and his Lotus was a comfortable winner from Burns Mercedes 154.

The finals promised to be really keen as they all knew the circuit and less than six seconds had separated finalists in heats of both events.

White, Headley and Farquharson lined up with XK 140 M.G.A. and Tojiero respectively, and from the drop of the flag fought every inch. The lead swapped all the time, and mistakes were almost fatal to make. Just five laps to go and it was either White or Headley,

but when the 100 laps was up, Headley was home by less than 20 secs, with the Tojiero a close third.

The G.P. was closer and faster. Ramsdale's Squalo Ferrari headed Lance with the Thomas Special, and Godden with the Auto-Union. These are probablv the three most consistently fast cars and drivers in the club. Lance had made up for his sports car performance by getting with it in GP. and Godden was very determined to have a go, but my money was on John Ramsdale who had won the Pittman Trophy. Good job I do not bet, for after the closest and fastest race of the day he finished third to Godden and Lance with less than 25 secs. covering the three . . . Those close last laps are often fatal. There *is* a limit for every track, and mistakes cost dear.

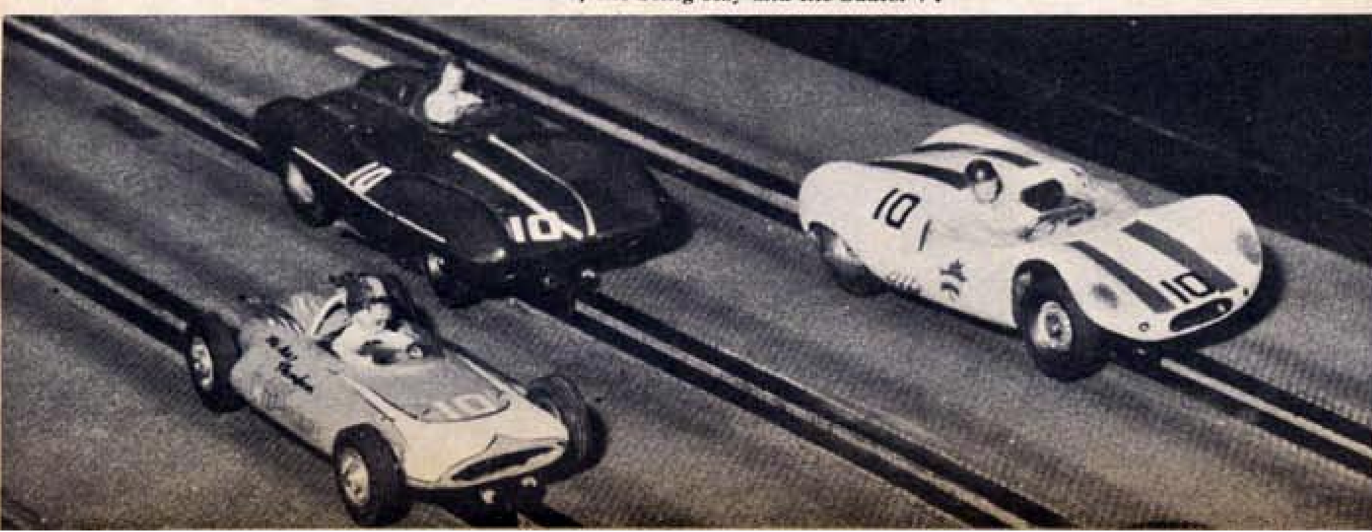


Another view of the Brooklands track. The whole operation is set up quickly on the benches. Note lap counters in background.

Two Grand Prix veterans built by R. Burgas of Bournemouth are the Mercedes at left and the Auto Union. Latter is equipped with prototype of the new MRRC ball bearing motor. Plastic body is also by MRRC.



Author Kennaugh showed his building skill at the event with these three beauties. Car at left is Mickey Thompson's Indy Special. Next to it are scratch-built versions of the Sting Ray and the Sadler V.

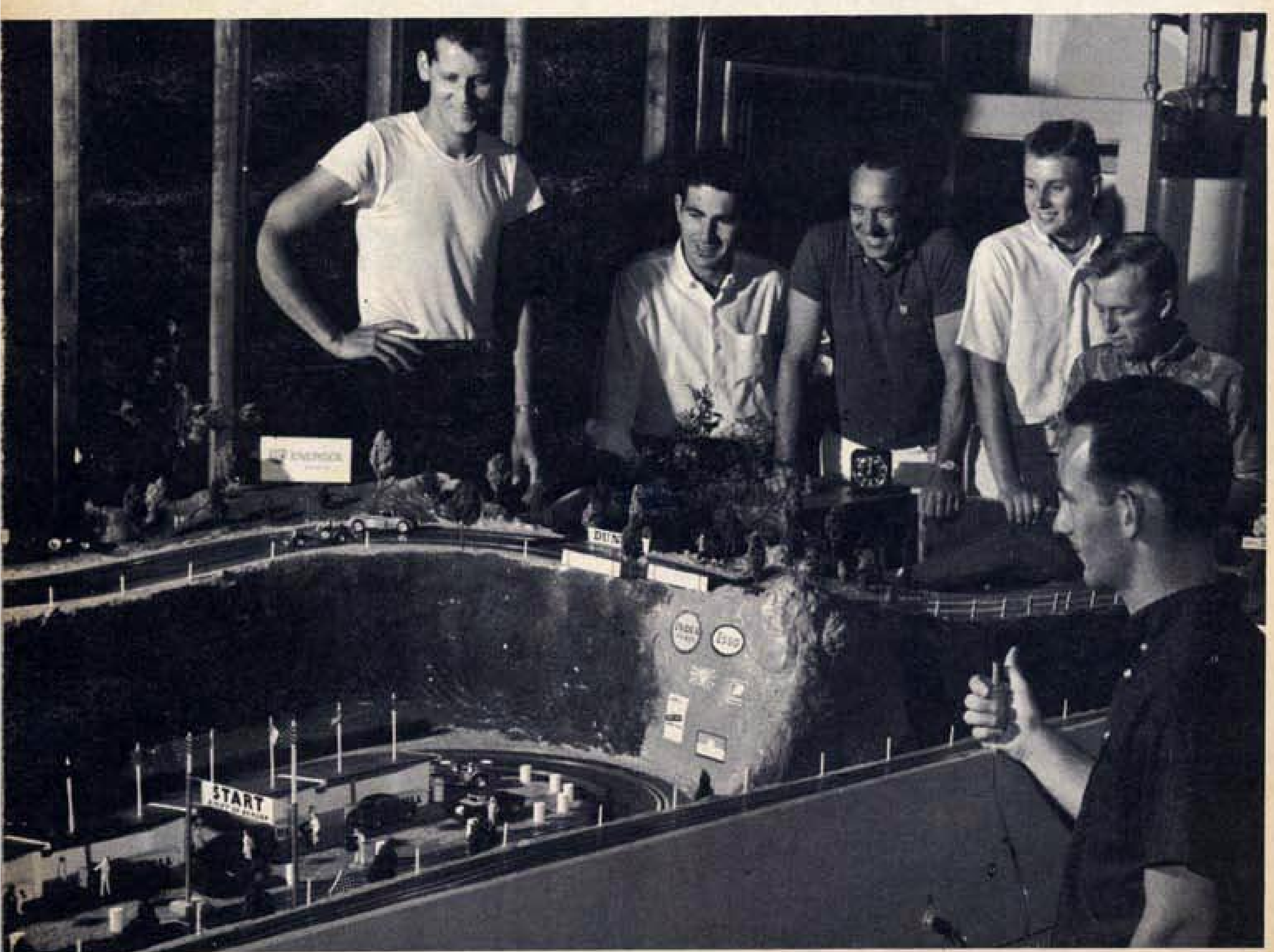


MCS Spotlights: Club of the Month

ECURIE CONCOURS Model Car Racing Club

The Ecurie Concours Model Car Racing Club of Saratoga-San Jose is the first California slot racing club to affiliate with the North American Scale (1/32) Road Racing Association. This adult organization is devoted exclusively to building and racing true 1/32 scale road racing cars. Bi-weekly Club racing events are rotated between three member owned tracks. A fourth track is in the final design stages. Just four months old and with only six members, this club has already sponsored a Sunday afternoon racing event at the D&S Hobby 6 lane 200 foot track in Mountain View. Club officials Don Stammers, Hudson Edwards or Norm Davis may be contacted by those persons in the San Jose area who are interested in 1/32 scale road racing and desire to participate in well organized Club racing events.





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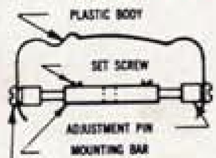
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Cat. No. 692—1/32 scale road tire. $.39 pr.
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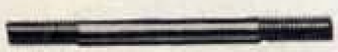
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